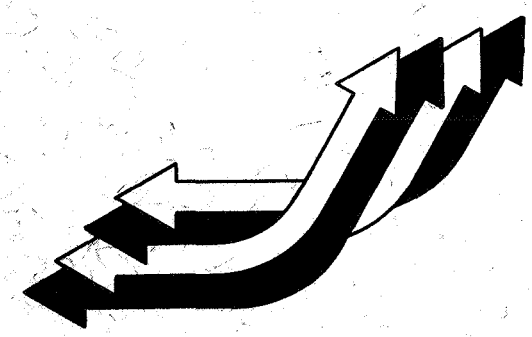
PART II

Contractor Report

Public and Private Schools

An Analysis of High School and Beyond a national longitudinal study for the 1980's



National Center for
Education Statistics

The increments given in table 6.2.1 for each type of private school are positive, showing that students of the same background characteristics have generally higher achievement in both of these types of private schools than in the public shools. However, the differences are reduced compared to the raw differences from table 6.1.3 (shown in the lower half of table 6.2.1), because of the statistical control of family background. Moreover, the increments are slightly higher for Catholic schools than for other private schools.

Comparing the Catholic and other private background-controlled increments to the raw increments shows that for Catholic schools, between half and two thirds of the raw increments are eliminated by the statistically controlled background differences, and for other private schools, over two thirds of the raw increments are eliminated. The greater reduction for students in the other private schools is due to the fact that their backgrounds differ more from public school students than do the backgrounds of Catholic school students.

The background standardized senior public school increment, shown on the fourth row of table 6.2.1, provides us with two additional pieces of information regarding achievement in public and private schools. First, the fact that the estimates are all slightly lower than what would be estimated from the raw achievement scores (shown in the lower half of the table) indicates that the family backgrounds of seniors are slightly higher than those of sophomores, a difference that is attributable to greater dropout rates between grades 10 and 12 for students from lower socioeconomic backgrounds. Thus the estimated growth from sophomore to senior years, which appears low in table 6.1.3, is even less than what appears there.

Second, comparing the sophomore increments in Catholic and other private schools with senior increments in public schools indicates that the Catholic school increments are about half as large, that is, about one grade level, while the other private increments are about half as large in vocabulary and mathematics, but only about a fifth as large in reading. Thus, except for reading comprehension in the other private schools, in which the increment is almost negligible, the estimated increments due to attendance at Catholic or other private schools are about one grade level.

It is useful to ask about the robustness of these results. They appear rather robust under changes in background variables (though use of subsets of the background variables shows greater effects) and under changes from subtests to full tests. If we use the full tests in reading, vocabulary, and mathematics, we obtain the following estimated increments:

	Reading	Vocabulary	Mathematics
Public school sophomores	8.92	10.67	18.39
Catholic increment	.67 (.085)	.99 (.091)	1.17 (.159)
Other private increment	.37 (.030)	.73 (.185)	1.50 (.321)

The private school increments are larger for the full tests, but expressed as fractions of the total number of items in the test (19, 21, and 38 rather than 8, 8, and 18) they are very close to the same. (Standard errors of the increments, obtained by the method described in the footnote to table 6.2.1, are in parentheses.)

If a single regression equation with dummy coefficients for each of the private sectors is used, rather than separate private and public equations, we find that, except in vocabulary, the estimated increments are somewhat smaller than those found in table 6.2.1 for the subtests and in the listing above for the full tests:

	Subtests			Full tests		
	Reading	Vocabulary	Mathematics	Reading	Vocabulary	Mathematics
Coefficients:						
Catholic	.26	.41	.46	.54	.92	.88
	(.04)	(.04)	(.09)	(.09)	(.09)	(.16)
Other private	.02	.31	.22	.06	.44	.75
	(.07)	(.06)	(.12)	(.11)	(.12)	(.21)

However, most of the effects remain at a sizable level. In all cases, except three for other private schools (reading subtest and full test, and the mathemathics subtest), the sizes of the coefficients are considerably greater than twice their standard errors (shown in parenthesis).

Thus, using several different estimates, we find that after controlling for varying student background characteristics, Catholic school sophomores perform at the highest level, sophomores in other private schools next, and sophomores in the public schools lowest. And the differences between the public sophomore performance and each of the two private sectors is significant under each method.

Another way to examine differential effects of public and private schools is suggested in table 6.1.3, showing the raw scores of sophomores and seniors in each sector on identical subtests. We can make a sophomore to senior comparison similar to that in section 6.1, but controlling on family background differences. In effect, this is an extension of table 6.2.1 and can be estimated at the senior level for each of the private sectors, as follows:

$$I_j = \hat{Y}_j - \hat{B}_j - G$$

where I_j is the added senior increment in sector j, $\hat{Y}_j$ is the background standardized senior achievement estimate, $\hat{B}_j$ the sophomore background standardized achievement estimate, and G is the standardized growth rate (sophomore to senior increment) in public schools.

TABLE 6.2.2

ESTIMATED SOPHOMORE-TO-SENIOR ACHIEVEMENT GROWTH IN CATHOLIC AND OTHER PRIVATE SCHOOLS BEYOND THAT IN PUBLIC SCHOOLS FOR STUDENT WITH AVERAGE BACKGROUND[a]: SPRING 1980

(Standard error of difference in parenthesis)

	Reading	Vocabulary	Mathematics
Catholic	-0.07 (.072)	0.19 (.066)	0.01 (.136)
Other private	0.27 (.095)	0.17 (.087)	0.17 (.180)

[a]Estimates are obtained from separate regressions for sophomores and seniors in each sector, obtaining predicted achievement in each sector and grade standardized to mean public school sophomore background characteristics for seventeen objective and subjective characteristics. "Extra growth" is obtained by comparing these standardized achievements between grades and then across sectors. Standard errors for the differences between Catholic and other private sophomore-to-senior growth and public sophomore-to-senior growth are calculated by taking the square root of the sum of variances of the sophomore-to-senior differences for the sectors under comparison. The variances of the sophomore-to-senior differences are obtained by the method described in the footnote to table 6.2.1. Regression coefficients are given in tables A.5.1 and A.5.2 in Appendix A.

These added sophomore-to-senior increments in both private sectors are beyond the senior increment (shown in table 6.2.1) in the public sector as shown in table 6.2.2. The table shows, overall, little or no evidence of extra growth in the Catholic schools beyond that in the public schools, but consistent extra growth in the other private schools. The amount of extra growth in the other private schools averages about a quarter of the sophomore-senior growth in the public schools (0.27 + 0.17 + 0.17 from table 6.2.2 divided by 0.73 + 0.63 + 0.88 from table 6.2.1).

Again, it is useful to look at alternate methods of estimating these increments. If the full tests were used rather than the subtests, senior scores and increments comparable to those in table 6.2.1 would be as follows (standardized to public school sophomores):

	Reading	Vocabulary	Mathematics
Public school seniors	10.41	12.45	18.48
Catholic increment	0.54 (.098)	1.29 (.132)	0.90 (.138)
Other private increment	1.18 (.208)	1.32 (.280)	1.34 (.290)

Although comparison of these increments directly to the sophomore increments on the full tests is less meaningful because of the different items in the total tests for sophomores and seniors, a comparison may still be made. The comparison shows that inferences would not be changed if the full tests had been used.

A single regression equation for seniors in all sectors shows significant differences for both the subtests and full tests:

	Subtests			Full tests		
	Reading	Vocabulary	Mathematics	Reading	Vocabulary	Mathematics
Coefficients:						
Catholic	.13 (.05)	.46 (.04)	.46 (.09)	.32 (.09)	1.15 (.12)	.64 (.14)
Other private	.23 (.06)	.34 (.06)	.51 (.13)	.78 (.13)	.99 (.16)	.96 (.19)

The subtest coefficients may be compared to the sum of the relevant rows in table 6.2.1 and 6.2.2, and the full test coefficents may be compared to measures shown in the preceeding tabulation. These coefficients are all lower than the effects calculated by use of separate equations for the public and private sectors, but all are consistently greater than two standard errors (in parenthesis).

Thus the analysis suggests that for a student body standardized to the public school sophomore average background, the expected achievement of sophomores is highest in Catholic schools, next in other private schools. As for sophomore to senior growth, there is evidence of about 25 percent more growth in the other private schools than in either the Catholic or public schools.

However, these results concerning "growth" must be regarded with caution, for there are at least two potential sources of bias. First, if the background controls either overcompensate for or do not wholly eliminate the selectivity bias, this will lead to higher scores among private sector sophomores. Similarly, if the selectivity affects growth rates as well as levels, the background controls may either overcompensate or not wholly eliminate the selectivity bias in higher private school growth rates. Second, since the dropout rate is considerably greater in the public schools than in either of the private sectors, this may lead to a bias in the opposite direction. Some of the apparent growth in the public sector may be attributable to the loss of lower achieving students between the sophomore and senior years.

The existence of these potential sources of bias, possibly working in the opposite direction, suggests a more extended examination of growth rates under a variety of different assumptions. We turn now to that examination.

6.2.1.1 Estimates of Growth Rates

The estimates of growth are plagued both by initial selectivity into the different school sectors, and by a grade 10 to grade 12 selectivity due to dropouts between grade 10 and 12. These two types of selectivity very likely introduce opposite biases into the public-private achievement comparisons, biases which may be incompletely eliminated by the background variables we have introduced as controls. There is in addition another problem, that of

the "ceiling effect." If the sophomores in one school know an average of six out of eight vocabulary items, while those in another school know only three out of eight, the sophomore-senior growth in the first school can be a maximum of two items, while the growth in the second school can be a maximum of five items. Yet we have compared "growth" in previous sections by examining only growth in number of items. This could be remedied by standardizing sophomore-senior differences, dividing the difference by the number of items not learned by the sophomore year.

An equivalent but somewhat more informative calculation is the calculation of an explicit learning rate, unaffected by the existence of a ceiling. The calculation is as follows. If q is a learning rate expressed as the probability per unit time of learning what remains to be learned, and p is the probability of knowing an item at a given time, then the equation for learning is $dp/dt = q(1-P)$. Solving for q, the learning rate, in terms of p_0 (the probability of knowing the item as a sophomore) and p_1 (the probability of knowing it as a senior), gives $q = -t^{-1}\log (1 - p_1)/(1 - p_0)$. Estimates of p_0 and p_1 are given as the proportion of items correct as sophomores and seniors respectively. The time difference is 2 years, $t = 2$. The learning rate calculated in this way will be an instantaneous rate expressed as items learned per year per item not already learned.[1]

The ceiling effect problem can be solved in this way. The dropout problem (or more generally the problem that the sophomores and seniors are samples from different populations) cannot be solved with present data, but some headway is possible. In particular, it is possible to calculate

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[1]Some critics of the draft report have objected to the introduction of this learning "model" as introducing assumptions that have unknown effects. This objection fails to recognize that the learning rate as calculated is nothing more than a calculation of the gain per unit line divided by the possible gain at that time, taking into account that the possible gain will vary continuously over time.

different learning rates in each type of school, using different assumptions. Some of these assumptions, such as those used in the preceding section, almost certainly overestimate learning rates by not taking dropouts into account; some very possibly underestimate learning rates by overcorrection for dropouts. Thus, rates calculated under some assumptions favor schools in which dropout is high, others favor schools in which dropout is low. These estimates of learning rates under different assumptions can give some bounds, not only to learning rates, but also to the public-private differences.

The value of doing all of this, of course, is that estimates of growth provide a different and more effective way of correcting for bias due to selection into the private sector. In effect, they use the sophomore test score as a control for the senior test score, thus controlling for any selective factors which show up in high sophomore scores, and not only those which are related to measured background characteristics.

We will provide three estimates of growth rates in reading, vocabulary, and mathematics achievement, arrived at in different ways, as described below.

1. Raw Scores Table 6.1.3 gives the raw test scores for sophomores and seniors in the three subtests. These test scores are not corrected for dropout. Thus learning rates calculated from them will overestimate learning rates, and will overestimate most for the public schools, where the dropout rate is highest (as will be indicated below).

2. Background-adjusted scores Tables 6.2.1 and 6.2.2 provide the growth rates in each sector for students with the measured background characteristics of public school sophomores. In the public sector, as well as the private sector, this means there is a correction for dropouts through the background standardization which adjusts seniors' scores to those of the average public school sophomore. However, insofar as the lower scores of dropouts are not wholly

TABLE 6.2.3

TOTAL ROSTERS OF SOPHOMORES AND SENIORS IN SAMPLED SCHOOLS FOR ESTIMATING DROPOUTS BETWEEN SOPHOMORE AND SENIOR YEARS: SPRING 1980

Item	Public	Catholic	Other Private
Number of sophomores in sampled schools	369,942	16,030	2,009
Number of seniors in sampled schools	282,084	14,181	1,746
Difference	87,858	1,849	263
Proportion of sophomore class	.24	.12	.13
Proportion of senior class	.31	.13	.15

accounted for by these background factors, there remains an uncorrected overestimate of learning rates. This will again be greatest in the public schools, where the dropout rate is greatest. Here, then, any uncorrected selection bias operates against the private sectors.

3. Dropout-adjusted senior scores By first estimating the proportion of dropouts in each sector, and then by making assumptions of their place in the test score distribution, it is possible to recalculate senior scores in effect by adding back into the senior test score distribution the assumed scores of dropouts. Our estimate of dropouts is obtained as follows. In each school, we know the total size of the senior roster and the total size of the sophomore roster. The difference between them is due to several factors, including the sizes of the total cohort these two years, as well as the dropout rate between sophomore and senior years. Since factors except the last are relatively minor, we may regard this difference as an estimate of the number of dropouts who are no longer present in the senior class.

Table 6.2.3 shows the total number of sophomores and seniors in the sampled schools by sector, as well as the fraction this represents of the sophomore class and the fraction it represents of the senior class. The table shows that, according to this estimate, about 24 percent of the sophomore

class in public schools is gone by the senior year, or a 24 percent dropout rate. The comparable rates in Catholic and other private schools are 12 and 13 percent, respectively.

The 24 percent dropout rate in public schools represents 31 percent of the senior class. This means that only about 76 percent of the students (100/131) who should be compared with sophomores to get a measure of achievement growth have been included in the public school data--and that the missing 31 percent of seniors came primarily from the lower part of the distribution. Similar statements, though for smaller fractions of the class (13 to 15 percent), can be made about Catholic and other private schools. To adjust the senior test score distribution in each sector, we have assumed that the dropouts came from the lower 50 percent of the test score distribution on each test and were distributed in that lower half in the same way that remaining seniors in the lower half of the distribution are distributed. In effect this means that within the lower half of the senior test score distribution, and within the upper half, the distributions do not change; but the lower half, augmented by the dropouts, becomes a larger share of the total.

This assumption leads to modified senior test scores, giving the senior scores and estimated senior-sophomore gains shown in table 6.2.4. The estimated gain is reduced most in the public schools, because the estimated dropout rate is over twice as high as in either private sector.

Since the estimated proportion of dropouts is somewhat higher than estimates from other sources (Grant and Eiden: 1980), they should be considered overestimates of the actual dropout rate. The assumption about where the dropouts came from in the test score distribution may be problematic. Dropouts may be less fully drawn from the lower part of the test score distribution than assumed. If there are errors in numbers of dropouts and

TABLE 6.2.4

ESTIMATED SOPHOMORE-SENIOR GAINS IN TEST SCORES WITH CORRECTIONS FOR DROPOUTS MISSING FROM SENIOR DISTRIBUTION: SPRING 1980

Item	Public			Catholic			Other Private		
	10	12	Est. Gain	10	12	Est. Gain	10	12	Est. Gain
Estimated gains[a]									
Reading	3.57	4.05	0.47	4.33	4.81	0.47	4.30	5.11	0.81
Vocabulary	3.68	4.09	0.41	4.58	5.19	0.61	4.73	5.35	0.62
Mathematics	9.39	9.77	0.38	11.04	11.73	0.68	11.28	12.26	0.98

[a]Numbers are rounded to two decimals independently so that some rounded "estimated gains" differ from the difference between rounded sophomore and senior scores.

their locations in the achievement distribution, they probably lead to underestimates of learning rates, and greatest underestimates where dropout is greatest, that is, the public schools.

Thus, if learning rates are calculated from each of these three sets of test scores—raw, background-corrected, and dropout-corrected—we have learning rates which we can be fairly certain are overestimates in the first two cases and underestimates in the third. The first two estimates favor public schools while the third favors the private schools.

Table 6.2.5 shows the estimated learning rates, calculated for (1) table 6.1.3 (2) tables 6.2.1 and 6.2.2; and (3) table 6.2.4. These rates provide a range for each test and each sector, within which the correct rate very likely falls. The rates are lowest for the mathematics items, and roughly comparable for the reading comprehension questions and the vocabulary words. For vocabulary and mathematics, there is no ambiguity: both rows (1) and (2), which are probably favorable for public schools, and row (3), which is probably favorable for private sector schools, show higher learning

TABLE 6.2.5

ESTIMATED LEARNING RATES: USING RAW SCORES, BACKGROUND-ADJUSTED AND DROPOUT-ADJUSTED ESTIMATES[a]: SPRING 1980

	Public	Catholic	Other Private
Reading			
1. Raw Scores	.11	.10	.16
2. Background-adjusted	.09	.09	.13
3. Dropout adjusted	.06	.07	.12
Vocabulary			
1. Raw Scores	.10	.13	.14
2. Background-adjusted	.08	.12	.11
3. Dropout-adjusted	.05	.10	.10
Mathematics			
1. Raw Scores	.08	.08	.12
2. Background-adjusted	.05	.06	.07
3. Dropout-adjusted	.02	.05	.08

[a]Background standardized to average public school sophomore.

rates in both Catholic and other private sectors. In reading, however, there are inconsistencies: rows (1) and (2) show a lower rate in the Catholic sector than the public sector, while row (3) shows a higher rate in the Catholic sector.[1]

[1]It should be pointed out that the apparent low sophomore-senior learning rate for reading in the Catholic schools is inconsistent with the raw and background-standardized sophomore rates, which are higher than in either of the other sectors. If a constant learning rate is assumed, and the public school learning rate from row 2 is used to calculate the time when reading comprehension was zero, the time would be 6.6 years before the grade 10 test. If the same 6.6 years is used in conjunction with the background-standardized sophomore score of 3.92 in Catholic schools (from table 6.2.1), this gives a learning rate of .10 during that period, greater than the .09 rate in the public sector.

Thus the overall evidence from calculation of ranges of learning rates confirms the inference of somewhat greater achievement in the private sector for vocabulary and mathematics; the evidence is divided concerning the public-Catholic comparison in reading.[1]

6.2.1.2 Different effects for students from different backgrounds

In addition to the level of achievement students obtain in the various sectors, it is important to know something about the equality of outcomes for students from different backgrounds. We may ask, then, just how similar the sectors are in the differences in achievement that exist between students with varying family backgrounds.

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[1]A problem not discussed in the text is the fact that some students in all sectors did not take the tests, and the proportion differs from sector to sector though it is similar from test to test within sectors. For the mathematics tests, it is 9.2 percent for sophomores and 13.0 percent for seniors in the public sector, 4.2 percent for sophomores and 8.8 percent for seniors in the Catholic sector, and 18.2 percent for sophomores and 19.0 percent for seniors in the other private sector. To take into account these differences, tests scores were imputed for those with missing test scores, using a variety of predictor variables. For example, for the mathematics test for seniors, the following variables were included: grades in school; number of semesters of mathematics courses in grades 10 to 12; having taken algebra 2, calculus, remedial mathematics, advanced mathematics; reading the front page of the newspaper; interest in school; satisfaction with self; absences; tardiness; sex; father's education; mother's education; family income; race; and ethnicity. Separate regression equations were estimated for seniors and sophomores, and for public and private (the two private sectors together). R^2 were .37 and .50 for sophomores and seniors in public schools and .39 and .47 for sophomores and seniors in private schools. Recalculating the mean achievement in mathematics after values were imputed changes the means very little (sophomores: 9.2, 11.1, 11.2 in public, Catholic, and other private, and seniors; 10.4, 12.2, 12.7 in public, Catholic, and other private). Comparing these scores with those in table 6.1.3 shows little difference, with a 0.2 decrease in both sophomores and seniors in public schools, 0.1 increase in both sophomores and seniors in Catholic schools, and 0.1 decrease in sophomores in other private schools, and no change in seniors. Consequently, imputed values were not included in making the calculations in the test. However, to fully test any effect of the missing values, learning-rate calculations were made for mathematics with imputed scores included. These were .02, .07, and .09 for public, Catholic, and other private schools respectively. These show slightly higher values for Catholic and other private schools, but do not change the qualitative inferences made in the text.

For instance, what is the expected achievement for students whose parents' education is considerably above the national average as compared with those whose parents are considerably below the national average? Such a comparison will show how well each of these school sectors functions for students from different family backgrounds.

For this analysis, Catholic and other private schools were examined separately, because of evidence that students from differing family backgrounds fare differently in these two sectors. Consequently, to obtain stable estimates the number of controlled background characteristics were reduced. We believe that this does not affect the inferences drawn in this section.

Three background characteristics are chosen for the comparisons: parental education, race, and ethnicity. To compare the expected achievement by parental education, we estimate first the case where both parents are high school graduates, and, second, the case where both parents are college graduates—keeping the other background characteristics (income, race and ethnicity) at the average for public school sophomores. Similarly, the expected achievement by race and ethnicity is estimated, keeping the other background variables at the national average.[1]

Table 6.2.6 shows the results of calculating these expected achievement differences by grade and section. The most striking finding is

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[1]These comparisons are carried out using the same type of analysis as in tables 6.2.1 and 6.2.2 , but with fewer background variables, as described in the text. Regression coefficients are given in appendix A.4. For the black-white and Hispanic/non-Hispanic comparisons, the regression coefficients themselves are used, since black and Hispanic were dummy variables in the equation. For parental education, the difference is calculated as the sum of regression coefficients for parental education, multiplied by 5 (=7-2). The black-white and Hispanic/non-Hispanic differences are not shown for other private schools because the numbers of blacks and Hispanics in the sample of these schools is small enough to make estimates unstable.

TABLE 6.2.6

ESTIMATED ACHIEVEMENT AT GRADES 10 AND 12 FOR STUDENTS WITH PARENTS OF DIFFERENT EDUCATIONAL LEVELS, DIFFERENT RACE, AND DIFFERENT ETHNICITY, OTHERWISE STANDARDIZED TO PUBLIC SOPHOMORE BACKGROUND: SPRING 1980
(Standard error in parenthesis [a])

Comparison Category	Public Sector						Catholic Sector						Other Private Sector					
	Reading		Vocabulary		Mathematics		Reading		Vocabulary		Mathematics		Reading		Vocabulary		Mathematics	
	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	12	10	12
1. Parental education																		
a. High school graduation	3.1	3.9	3.1	3.8	8.3	9.3	3.8	4.7	4.0	4.9	10.1	10.9	3.3	4.0	3.4	4.2	8.6	9.4
b. College graduation	4.2	4.9	4.3	5.0	10.6	11.7	4.6	5.1	4.8	5.6	11.2	12.4	4.6	5.4	4.8	5.6	11.3	12.7
2. Race and ethnicity																		
a. White/Anglo	3.8	4.7	3.9	4.6	9.9	11.0	4.3	5.0	4.5	4.8	11.0	12.0	*	*	*	*	*	*
b. Hispanic	3.0	3.5	3.2	3.7	8.1	8.8	3.8	4.6	4.0	4.8	9.5	10.7	*	*	*	*	*	*
c. Black	2.7	3.3	2.8	3.4	7.2	8.1	3.7	4.4	3.5	4.5	9.1	10.3	*	*	*	*	*	*
3. Differences:																		
a. College vs High school parental education	1.1 (.03)	1.0 (.03)	1.2 (.03)	1.2 (.06)	2.3 (.06)	2.4 (.06)	0.7 (.09)	0.5 (.10)	0.8 (.08)	0.7 (.08)	1.0 (.16)	1.4 (.19)	1.4 (.22)	1.4 (.23)	1.5 (.20)	1.5 (.21)	2.7 (.44)	3.3 (.43)
b. Anglo vs. Hispanic	0.8 (.05)	1.2 (.06)	0.7 (.06)	0.9 (.05)	1.8 (.07)	2.2 (.11)	0.5 (.14)	0.4 (.16)	0.5 (.14)	0.5 (.13)	1.6 (.26)	1.2 (.30)	*	*	*	*	*	*
c. White vs Black	1.2 (.04)	1.3 (.04)	1.1 (0.5)	1.3 (.04)	2.7 (.09)	2.9 (.08)	0.6 (.16)	0.6 (.17)	1.0 (.15)	0.8 (.15)	2.0 (.29)	1.7 (.33)	*	*	*	*	*	*

*Sample size too small to estimate reliability.

[a] Standard errors of the differences are computed by the method described in the footnote to table 6.2.1, with the following modifications: The vector of means, X, now has the determined values for parental education, race or ethnicity, as the case may be, in place of the public sophomore means on those variables. Since, for each sector-grade level, only one equation is estimated per test, the covariance of slopes matrix is identical for both of the X vectors that enter a given comparison.

the greater homogeneity of achievement of students with different parental education levels in Catholic schools than in public schools. Also, there is a greater difference in achievement among students with different parental education levels in the other private schools than in the public schools. That is, the performance of children from parents with differing educational levels is more similar in Catholic schools than in public schools (as well as being, in general, higher), while the performance of children of parents with differing educational backgrounds is less similar in other private schools than in public schools (as well as being, in general, higher).[1]

Thus we have the paradoxical result that the Catholic schools come closer to the American ideal of the "common school," educating all alike, than do the public schools. Furthermore, as the lower panels of table 6.2.6 show, a similar result holds for race and ethnicity. The achievement of blacks is closer to that of whites, and the achievement of Hispanics is closer to that of non-Hispanics in Catholic schools than in public schools.

There remain two possible interpretations for this result, which will not be pursued here, but which warrant analysis. One is that within the same school there is greater diversity in performance between children of different family backgrounds in public and other private schools than in Catholic schools. The other is that the greater diversity of performance in public and other private schools arises from a greater diversity of schools. More specifically, in some schools, composed primarily of students from higher socioeconomic backgrounds, performance is high, higher than would be predicted on the basis of comparable students' performance in more heterogeneous

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[1]This same pattern of results is found within academic and general programs in the public and Catholic sector. (See Coleman, Hoffer, Kilgore, 1981)

schools. On the other hand, in schools composed primarily of students from lower socioeconomic backgrounds, performance is lower than would be predicted on the basis of comparable students' performance in heterogeneous schools. Data presented earlier in section 6.1 on the fraction of achievement variable lying between schools shows that the Catholic schools have the lowest variance, and the other private schools the highest.

There is another important aspect of table 6.2.6. This is the comparison of achievement differences among students from different backgrounds at the sophomore and senior levels in different sectors. In general, these differences are <u>smaller</u> at the senior level than at the sophomore level in the Catholic schools, while they are <u>greater</u> at the senior level in the public and other private schools. Among nine sophomore-senior comparisons, six senior differences are smaller, two are equal, and one is greater in the Catholic schools; one is smaller, one is equal, and seven are greater in the public schools; and one is equal and two are greater in the other private schools.[1]

Thus, not only is the achievement more alike among students from different backgrounds in the Catholic schools than in the other sectors, it seems to become increasingly alike from the sophomore to the senior year. In the public and other private schools, the achievement of students from different backgrounds seems, in contrast, to diverge.

6.2.1.3 Alternative strategies for distinguishing between selection and effect

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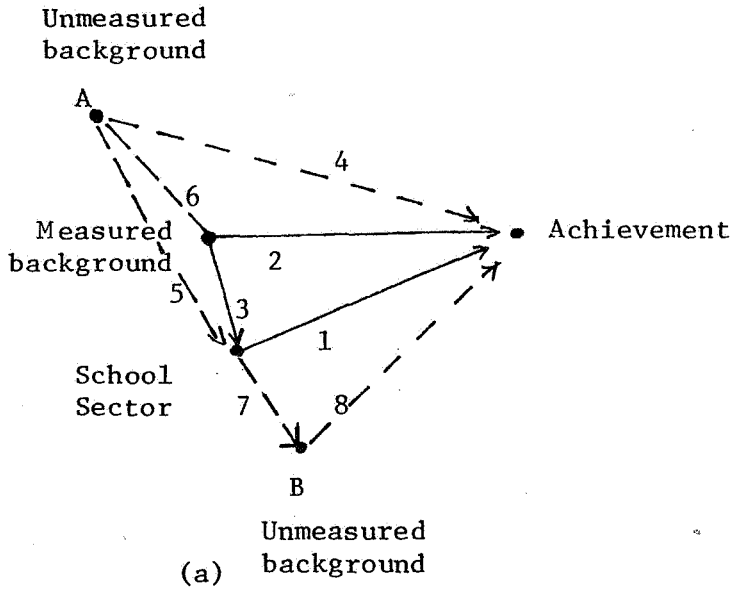
[1]The qualitative inferences made in this section in comparing Catholic and public schools would be unchanged if all 17 background characteristics were controlled (analysis not reported here). It is because of the small sample size in the other private sector that the characteristics used here are reduced in number.

Because there is clearly self-selection into the private sector, the task of distinguishing between achievement differences due to selection and achievement differences due to different effects of schools in the three sectors is particularly important.

There is no wholly satisfactory way of distinguishing selection from effect in the absence of randomized assignment. For that reason, we have chosen to address the question of effect by several strategies. In section 6.2.1, we estimated achievement in public and private schools with statistical controls for all measured background factors which might also affect achievement and be related to the student's educational sector. The method, however, is subject to at least three kinds of difficulties. Two of these would ordinarily lead to attributing to effect of the sector some achievement differences actually due to selection. The other kind of difficulty would ordinarily lead to attributing to selection some achievement differences actually due to to differential sector effects. Two of the three may be illustrated by the path diagram in figure 6.2.1(a), and the third, by the path diagram in figure 6.2.1(b).

In figure 6.2.1(a) if there are effects as shown by lines 1, 2, and 3, then the method properly estimates the sector effects. If, however, there are other background factors, not included in the equation, labelled (A) in the diagram, and if there are non-zero effects represented by broken lines 4 and 5, then some achievement differences due to selection into the private sector are mistaken for sector effects. However, the closer to 1.0 the correlation (represented by line 6) between measured and unmeasured background factors, the smaller the error, reducing to zero if the correlation is 1.0.

Still in figure 6.2.1(a), there may be intermediate factors represented by (B), that are <u>affected</u> by school sector, and in turn affect



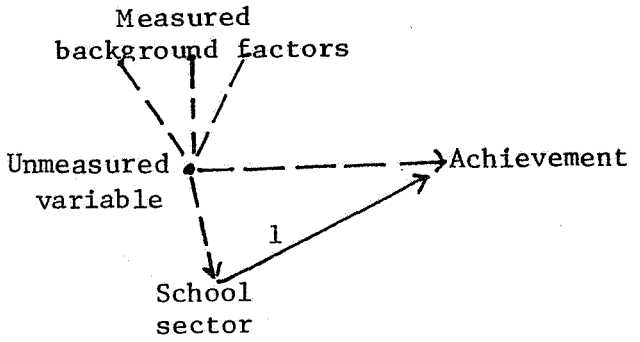


Figure 6.2.1

Unmeasured background and achievement models

achievement. These intermediate factors include such things as parental interactions and expectations which are responsive to school performance and school demands. If these intermediate factors are included in the equation, then some achievement differences due to sector effect--and operating through these factors (B)--are mistakenly attributed to selection.

The third kind of difficulty is shown by figure 6.2.1(b). If the same equation is used as in figure (a), but instead of lines 1, 2, and 3 being true effects, there are unmeasured variables of which the measured background factors are only imperfect indicators, then some differences due to selection will be mistakenly attributed to sector effect.

In the presence of these problems, our strategy has consisted of the following:

1) Including as many background factors as possible, so that in figure (a), the possibility of variables like those labelled (A)--that is, with effects 4 and 5 but with a small relation to measured background— is reduced. Also, if figure (b) is the correct specification, the inclusion of many factors, if they are together perfect indicators of the unmeasured variable, will eliminate any difference between the true sector effect and the measured sector effect.

2) Including in the equation some intermediate factors (represented by (B) in figure 6.2.1(a)), so that any tendency toward overestimates of sector effects due to unmeasured factors (A), or toward the paths shown in figure 6.2.1(b), is counterbalanced by a tendency toward underestimates due to inclusion of factors (B).

3) Measuring an additional consequence of the sector effect, in particular, the effect on sophomore to senior achievement growth. The general argument is that if a sector effect exists, it should be manifested not only through higher achievement at sophomore and senior levels, but through greater sophomore-to-senior growth. This was tested under three different sets of assumptions to provide a range of estimates of growth expected to bracket the true effect. This was done in section 6.2.1.1.

4) Measuring still another consequence of sector effect, if a sector effect exists, and if it operates through certain school practices and policies, then one should find that same effect within the public sector itself, by examining schools that differ in the practices. This is carried out in the next chapters.

There are, however, other alternative strategies. One, which has come into use by some social scientists, is explicit modelling of the structure shown in figure (b). Some (see Campbell, 1981) have argued that such an approach, using for example the LISREL program, should be used. We have not done so; our experience with LISREL is that its estimates are greatly dependent on model specification.

Another strategy which has been advocated is the use of econometric models designed to eliminate selection bias (Goldberger, 1981). These models have been designed for use in estimating - for example - the effect of a manpower training program on subsequent wages when there is self-selection into the manpower training program. Ordinarily, the necessity for such modelling arises because the dependent variable (e.g., wages) is observed only for the "selected" portion of the population (see Heckman, 1979), thus making estimates of sector effect not robust to differences in models.

The problem this approach addresses is this: Suppose the correct structure of effects is that shown by paths 1, 2, and 3 in figure (a). However, if one carries out a regression analysis involving only those students selected into a given sector, there is a potential bias in estimates of the effects of background variables on achievement, due to the self-selection into that sector. Since we used, in most of our analysis, separate equations for public and private sectors, and used estimates of the effects of background characteristics in arriving at sector effects, this sample specification bias could influence the estimates of sector effects. This seems unlikely, because, unlike the situation for which this approach was designed, here the dependent variable, achievement, is observed for the total

population of 10th and 12th grade students, and our analysis involved use of data on the full sample--albeit in two equations.[1]

In addition, supplementary analysis (see pp. 20 and 22) was done using all sectors in a single equation, thus involving no selection in the sample on which the regression analysis was done.

Nevertheless, it is possible to take selection into account in our equations for the separate sectors.[2] Two equations must be identified for such an analysis: one, a probit equation, which predicts entry into the private (or public) sector; the other, a regression equation which predicts the achievement outcome, controlling on the probability of having the observed background characteristic governing selection, given that one was in the private (or public) sector.

We used this technique in order to have still another approach to distinguishing differences in achievement due to selection into a sector from those due to sector effects. Two model specifications were used. In both, the (full) sophomore mathematics test was used as the outcome variable. The first model assumes that all the variables which affect achievement directly also affect entry into the private or public sector. Thus, the selectivity bias control in the achievement regression equation captures the nonlinear

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[1]A more appropriate use of the model would be to estimate the effects of various factors on achievement among seniors in 1982 or when observations as sophomores were made in 1980, but who are not all present in 1982. If no testing of dropouts were to be done in 1982, the method could be used to correct for dropouts when estimating effects of background and school factors on achievement.

[2]This is done by including, in an ordinary least squares regression, or a generalized least squares regression, a term representing the probability of the private sector. (The inverse of this quantity is technically known as Mill's ratio.) See Heckman (1979), who has developed this technique, for an extended discussion.

effects of the set of variables in question on the achievement outcome. For both the probit equation predicting sector entry and regression equation predicting mathematics achievement, all but two of the seventeen variables used earlier were entered into the equation: father's education and father's expectations for college were deleted.[1] Two variables were added to the analysis because of their relationship to entry into the private sector: religious background (Catholic versus non-Catholic) and region (Northeast versus other). The results for this model were not reasonable.[2]

For the second model specification we identified three variables as instrumental—that is, they affect entry into the private or public sector, but do not have a direct effect on achievement: income, religion, and educational expectations in the eighth grade. Each variable captures some major factor thought to contribute to private school entry: parents' financial assets, religious value preferences, and educational ambitions. The estimates for increments to achievement due to being in a private sector school using this second model of selecting and achievement again were greater than the raw increments, a result at odds with our other analyses, which showed that controlling on background factors reduces the raw increments by a half to two thirds or more. The dependence of these results on model

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[1]The program available for this analysis required a listwise deletion of cases and only 70% of the respondents had usable data on father's education. Sopho more response to item BB039 (father's education) included 8 percent who said they did not live with father, 17 percent who said they did not know, 4 percent multiple punch, and 2 percent who either refused to answer or had missing data.

[2]The results of the first stage, the probit analysis, are shown in Appendix table A.7 for both models. The probit analysis showed quite reasonable coefficients; the second stage analysis is where the problems arose.

The estimated increments due to being in a Catholic or other private school were not only positive, they were greater than the raw increments shown in Table 6.2.1, and in fact, put scores for private sectors beyond the test limits. The result probably expresses the instability of the model with the particular data set used here.

specifications and their instability with these data suggest that this potential avenue toward separating selection from effect is not helpful in this particular case.

Finally, we used one more approach to provide further evidence, following an approach once suggested by Donald Campbell. This is based on the following. If a private school's apparent effect is due only to selection, then the greater achievement found there will be complemented by achievement in the remaining group, say in the public school, that is lower than would be found if there were no private school. That is, any increased achievement in one comes about through lower achievement in the other.

However, if the apparent effect is a true one, there will be some additional achievement in the system, due to the presence of the private school. Achievement will not be lower in the public school.

This general idea may be tested as follows: Consider two groups with achievement anticipated as equal, says, in the absence of a differential school effect. Then if private schools are available to the first group, with p_1 choosing a private school, and not to the second, and there is a school effect of size c then the achievement in the first group, averaged over both public schools and private schools, should be $s + p_1c$, while it is only s in the second group. Or more generally, if it is less available to the second group, with only p_2 in the private school, the achievement should be $s + p_2c$ in the second group. The observed difference, d, between achievement in the two groups is $(p_1 - p_2)c$, and since p_2 and p_1 are known, c may be estimated as $c = d/(p_1 - p_2)$.

Two groups which can be assumed to have equal achievement, other things constant, are Catholics and non-Catholics. Catholics, however, have much greater access to private schools. For Catholics, $P_1 = .195$, and for

non-Catholics, P_2 = .051, giving a difference of .144. Thus, a bias-free estimation of the private (mostly Catholic) school effect is given as d/.144.

This approach is problematic because the method requires that one be fairly certain that the achievement in the two groups is equal, in the absence of private school attendance. More generally, the method is highly sensitive to small differences in S for group 1 and group 2, so long as the denominator, $p_1 - p_2$, is small.

The difference, d, can be calculated in two different ways: first, simply by the raw difference between Catholics and non-Catholics, and second, by the difference which remains after statistically controlling on variables related to achievement on which Catholics and non-Catholics might differ. The latter is done by a regression analysis on the total sample, using the previously specified seventeen background factors, region (Northeast versus other), and an additional dummy variable for Catholic religious background. The value of this dummy variable is then the estimate of d.

The six regression analyses (three tests in each of two grades) result in regression coefficients, which when divided by .144 give estimates for c, the increment in achievement due to attending a Catholic school. (The numbers in the first row should be comparable to row 2 of table 6.2.1). (Standard errors are in parentheses.) These estimates are:

	Reading	Vocabulary	Mathematics
Sophomores	.535 (.18)	.729 (.16)	1.59 (.34)
Seniors	-.430 (.20)	.375 (.17)	.424 (.37)

These comparable raw differences when divided by .144 are:

Sophomores	1.53	1.96	4.94
Seniors	.63	1.53	3.69

The results in the first two rows indicate much larger effects of Catholic school attendance for sophomores than the analyses shown in table 6.2.1, and smaller effects than calculations from table 6.2.2 would show. Therefore, the results appear to indicate that the assumption that s (public school achievement) is comparable for Catholics and non-Catholics is not valid, even after controlling for possible background differences, or that the divisor, .144, is sufficiently small as to make the results unstable. However, the evidence it does provide is in the direction of a positive effect of Catholic schools on achievement (except for reading, at the senior level).

Another possible comparison, based on the same general idea, is one among Catholics themselves. Some Catholic students have a Catholic school nearby, making attendance at Catholic school easy; others do not. Our sample design does not permit distinguishing these two sets of Catholic students, but it does allow distinguishing a subset of the former. Each Catholic school in the sample is in a particular (five-digit) zip code area. In many of these areas, public schools were also included in the sample. Thus, these areas have Catholics in public schools who had the opportunity to attend Catholic schools, but did not. They constitute the "nonselected" Catholic students. In the other public schools, some of the Catholic students had access to a Catholic school (that is, a school not in our sample), but some did not. The Catholic students in public schools without a Catholic school nearby should be higher-achieving than Catholic students in public schools near a Catholic school, by the amount of the selection bias. Adjusting the average achievement by use of the statistical controls will give a difference representing the unremoved selection bias. The amount of selection bias is the achievement in public schools in those areas without a nearby Catholic school, minus achievement in public school in those areas near a Catholic school. If this

TABLE 6.2.7

DIFFERENCES IN AVERAGE ACHIEVEMENT SCORES FOR PUBLIC SCHOOL STUDENTS IN AREAS WITHOUT A SAMPLED CATHOLIC SCHOOL AND PUBLIC SCHOOL STUDENTS IN AREAS WITH A SAMPLED CATHOLIC SCHOOL:[a] SPRING 1980

	Catholic Students	Non-Catholic Students
Adjusted with Five-Variable Background Regression		
Sophomores	-.200	.155
Seniors	.015	.103
Raw Differences		
Sophomores	.211	.255
Seniors	.194	.202

[a]Areas were identified by five-digit zipcode numbers.

difference is zero, it is evidence that all the selection bias has been removed; if it is positive, it is evidence that not all the selection bias has been removed.

Both the adjusted (using a five-variable background statistical control used in table 6.2.6) and unadjusted differences are shown in table 6.2.7. They are averaged over the three tests to give a single number at each grade level as a further control. The same comparison for non-Catholics (that is, those who are in public schools in the same five-digit zip code area as a sampled Catholic school, and those in public schools outside those areas) is made.

If there is an unremoved selection effect, then the Catholic column should be positive, as it is in three of four cases. It should also be greater than the non-Catholic column, but it is not. The non-Catholic column shows in all cases a positive value that is slightly larger. Thus, non-Catholics are used as a comparison to control for unmeasured characteristics associated in those zipcode areas where Catholic schools in the sample are located. The positive values shown for non-Catholics indicate a general lower achievement among non-Catholics in those areas (even after controlling in the regression on family income, mother's and father's education, race, and Hispanic ethnicity). This means that the positive values for three of the four Catholic numbers using both raw and adjusted values do not indicate a selection bias favoring Catholic schools. If anything it appears that any bias in the main analysis is in the other direction. Therefore, the test using the zipcode areas provides no evidence that there is an unremoved selection bias favoring Catholic school achievement in this analysis.

6.3 School sector effects on educational plans

In section 6.1, it was evident that plans for further education vary across sectors. What is not clear is just how much of this difference is a matter of selection and how much is actually brought about by the type of high school attended. While that question cannot be answered conclusively here, it is possible to understand more about the development of educational plans in each of the sectors.

First, controlling on the same seventeen family background characteristics used in table 6.2.1, it is possible to see the differences among the educational plans for students with similar family background characteristics. Table 6.3.1, comparable to the combined tables 6.2.1 and 6.2.2 for

TABLE 6.3.1

ESTIMATED INCREMENTS IN EDUCATIONAL EXPECTATIONS FOR STUDENTS IN PUBLIC AND PRIVATE SCHOOLS WITH FAMILY BACKGROUND CONTROLLED: SPRING 1980
(Standard errors of differences in parentheses)[a]

Expected level for public school sophomores	2.27
Sophomore increment in:	
Catholic schools	.25 (.020)
Other private schools	.11 (.041)
Senior increment in public schools	.08 (.008)
Additional increment for seniors in:	
Catholic schools	-.11 (.029)
Other private schools	.03 (.060)

[a]Standard errors for the increments are calculated by the method described in the footnotes to tables 6.2.1 and 6.2.2.

cognitive achievement, shows these differences. The table is based, as in the case of cognitive achievement, on regressions of expected level of schooling by grade and sector.

The categories used for this analysis, and their associated values, are given below. Thus, in examining table 6.3.1, the numbers should be interpreted in terms of these categories:

High school graduation or less	1
Some post-secondary education	2
Complete 4 years of college	3
M.A., Ph.D or other professional degree	4

The table shows that, for sophomores in public schools, the average level of education expected is 2.27, that is, slightly above "some post-

secondary" education. Sophomores with comparable backgrounds in Catholic schools are almost one quarter level (.25) higher, while those in other private schools are about one-tenth of a level (.11) higher. Public school seniors with backgrounds similar to public school sophomores are only .08 higher in expectations. The seniors in Catholic schools show .11 less gain than the seniors in public schools, or almost no gain relative to sophomores, while the seniors in other private schools show almost the same gain as the seniors in public schools. The lesser sophomore-senior gain in Catholic schools may, of course, be due to the higher levels for Catholic sophomores, which can produce a ceiling effect.

It is also difficult to estimate the differential sophomore-senior change in educational expectations by sector, because of the differential dropout rate by school type (as shown in table 6.2.3), although controlling on family background characteristics partially corrects for this. Thus, for example, the estimated gain of .08 of an educational level in public schools may be solely due to the fact that those with the lowest educational expectations in the sophomore class are no longer present in the senior class.

There is, however, a way of estimating the change in educational expectations over time and across sectors which is based on the same person changing over time, and thus is not affected by dropouts. The seniors were asked whether they expected to attend college when they were in grades 8, 9, 10, and 11. The sophomores were asked the same question about their college expectations in grades 6, 7, 8, and 9. (Items BB068, EB068, YB072). Although such retrospective accounts cannot be wholly reliable, they are the only source of such information for these students. And they do show changes over time, indicating that students did discriminate between years, and did not simply respond alike for all years.

Panel (a) in table 6.3.2 shows the actual percent of seniors who reported expecting to go to college at each grade level in each sector, and panel (b) shows the expected percent for students with family background standardized to the public school sophomore.[1] Panels (c) and (d) show comparable information for sophomores.

Looking at panels (a) and (c), the actual responses, the data show that college expectations are higher in the private school sectors than in the public sectors. Between sector differences in educational plans appear to correspond to between sector differences in family background, with the exception that parental income and education are lower in Catholic schools than in other private schools, while college expectations in Catholic schools are just as high as those in other private schools.

When backgrounds are standardized to public school sophomores in panels (b) and (d) of the table, the differences are in the same direction. The differences between public and private are reduced, though all private schools remain above the public schools. The Catholic schools become almost uniformly higher than the other private schools.[2]

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[1]Again, family background variables are those used in table 6.2.1 and listed in section 6.2.1.

[2]The regression analysis was carried out with a 0-1 dependent variable, a procedure not usually wise to follow because of heteroscedasticity. A logit analysis eliminates this problem. However, available logit programs required listwise deletion of missing cases (which is undesirable with seventeen independent variables) and did not allow weighting. This resulted in baseline percentages that were too high.

When percentages for subgroups are in the ranges found here, that is, not a great distance from 50 percent, the use of a 0-1 dependent variable in an ordinary least squares (OLS) regression will usually give results very close to those of logit analysis. We report OLS results here, because the use of weighting allowed appropriate population estimates. The logit analysis, which except for the overall level of percentages, gives results similar to those reported here, is presented in the appendix table A.4.9.

TABLE 6.3.2

PERCENT OF SENIORS AND SOPHOMORES IN PUBLIC AND PRIVATE SCHOOLS INDICATING EXPECTATIONS TO ATTEND COLLEGE AT EARLIER GRADES: ACTUAL PERCENT AND PERCENT STANDARDIZED FOR STUDENTS WITH AVERAGE PUBLIC SOPHOMORE FAMILY BACKGROUND[a]
SPRING 1980

At Earlier Grade	Public	Catholic	Other Private
Seniors			
a) Actual percent			
At 8th grade	47	67	67
At 9th grade	51	71	69
At 10th grade	56	74	75
At 11th grade	62	79	78
b) Standardized percent			
At 8th grade	44	55	48
At 9th grade	48	59	51
At 10th grade.....	54	62	57
At 11th grade.....	60	68	63
Sophomores			
c) Actual percent			
At 6th grade	40	54	59
At 7th grade	43	60	61
At 8th grade	51	72	69
At 9th grade	58	78	73
d) Standardized percent			
At 6th grade.....	40	42	43
At 7th grade.....	43	48	44
At 8th grade.....	51	59	54
At 9th grade.....	58	66	60

[a]Standardization procedure follows general form outlined in section 6.2 and includes the seventeen family background variables identified in that section.

Apart from changes over the years, the differing levels of educational aspirations, when family background is controlled, show results similar to those in table 6.3.1. In both cases, when family background is controlled, students in Catholic schools show the highest educational aspirations, students in other private schools the next highest, and public school students the lowest. However, expectations are quite high in all sectors and differences between sectors is not great.

However, the principal question at hand concerns the development or changes in expectations over years of school. What do these retrospective accounts show about such changes in different types of school? As shown in table 6.3.2, the expectations grow, and grow substantially. The difference in the sample as a whole is 14 percentage points between grades 8 and 11 for the seniors, and 19 points between grades 6 and 9 for the sophomores. But that growth differs in the various types of school, making comparisons difficult since differing amounts of growth are possible at each level.

The most commonly accepted way of making such comparisons is by comparing not percentages, but the logarithm of the ratio of the percentage and its complement, $p/(1-p)$, called a logit. Using the background standardized percentages from table 6.3.2, a measure of effects can be made by a comparison of logits between sectors. The excess of the private school logit over the public school logit is a measure of the effect that private school attendance has on the likelihood of planning to attend college. This "effect" of course includes both any actual effect that type of school brings about in college plans and any selection effect that it is not captured by statistically controlling on family background.

Thus, a positive value for the difference between private and public school logits does not mean being in that particular type of school effects

the development of college plans. Evidence of such an effect is shown by an increase in the difference between logits over the years in school.

Table 6.3.3 shows the difference in logits between each private school sector and the public schools, based on panels (b) and (d) of table 6.3.2. The results are very mixed. The data in panel (a) for the seniors shows a decline over grades for the Catholic schools and no increase for the other private schools. Thus the senior data suggest that being in a Catholic school has a lesser effect on increasing college plans than does being in a public school, and that being in an other private school has no greater effect.

But panel (b) for the sophomores presents evidence that conflicts with this. For the Catholic schools, the measure of effect does increase, suggesting that there is a greater effect of being in a Catholic school on growth in college plans than of being in a public school. The measure of effect again does not increase for other private schools, suggesting no greater effect of being in such a school on college plans.

A somewhat more reliable indicator of growth in college plans over time by these students can be obtained by combining the senior and sophomore retrospective data to obtain a single series beginning at grade 8 and continuing through grade 11. To create such a series, the difference in senior logits shown in panel (a) for grades 8 and 9 is averaged with the difference in sophomore logits shown in panel (b) for grades 8 and 9. The result is shown in panel (c). For the Catholic school students there is an increase in the gap between the public sector in the years preceding entry into high school, but from the eight grade on the gap changes a little. The difference between other private school students and public students also remains quite stable beyond eight grade. The end result of the analysis suggests there is little evidence of greater development of college plans for

TABLE 6.3.3

DIFFERENCES IN LOGITS FOR COLLEGE EXPECTATIONS, STANDARDIZED TO PUBLIC SOPHOMORES, BETWEEN EACH TYPE OF PRIVATE SCHOOLS AND THE PUBLIC SCHOOLS: SPRING 1980[a]

At Earlier Grade	Catholic	Other Private
a) Seniors:		
At 8th grade	.44	.16
At 9th grade	.44	.12
At 10th grade	.33	.12
At 11th grade	.35	.13
b) Sophomores:		
At 6th grade	.08	.12
At 7th grade	.20	.04
At 8th grade	.32	.12
At 9th grade	.34	.08
c) Sophomores and Seniors:		
At 6th grade (sophomores)	.08	.12
At 7th grade (sophomores)	.20	.04
At 8th grade (both)	.38	.14
At 9th grade (both)	.39	.10
At 10th grade (seniors)	.33	.12
At 11th grade (seniors)	.35	.13

[a]Logit of percentage expecting to attend college, minus comparable logit for public schools.

private high school students than for public high school students.[1] For the Catholic-public comparison, the combined results of the retrospective accounts show a greater effect for Catholic schools, but as indicated earlier, the results show inconsistencies. There is also evidence here that the statistical controls on family background used to bring about comparability of public and private school students are largely successful in doing so. At the earliest grade for which the question was asked, grade 6, the actual percentage reporting college expectations were 40 for the public schools, 54 for the Catholic schools, and 59 for the other private schools, giving differences of 14 and 19 respectively. After standardization by the same seventeen background variables used in the analysis of achievement, these percentages become 40, 42, and 43, that is, almost alike. This indicates that according to these retospective accounts, students in each of the types of schools who are alike on the measured background characteristics also showed almost the same college expectations. This increases our confidence that their achievement was also alike at this earlier point, but has increased more in the private sector between the 6th and 10th grades.

Now we turn to the examination of educational expectations for students with high or low parental education. As in the case of cognitive achievement, the differential educational expectations of students with especially high or low parental education can be estimated by sector, through

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[1]The logit analysis results presented in the appendix table A.4.10 differ in some respects from the estimates derived by ordinary least squares, but generally indicate the same patterns. Similar to the OLS results, the logit estimates show that the educational aspirations of Catholic school students develop more rapidly than public school students through the ninth grade, after which they develop at about the same rate. In contrast to the OLS results, though, students in the other private schools show consistently stronger development of college-going plans than public school students from the seventh through the tenth grades, with the largest relative gains occurring between the ninth and tenth grades.

use of the regression analysis used for table 6.2.6. As before, the educational expectations of students with both parents having a high school education are compared with students whose parents both have college degrees, in each type of school. The results of the analysis are shown in table 6.3.4. The numbers refer to the scale of educational levels reported in table 6.3.1.

The table shows that the educational expectations of students with high school educated parents are lowest if the students are in public schools, and highest if they are in Catholic schools. The difference at grade ten between Catholic and public schools is .56 educational levels, that between other private and public schools is .3 of an educational level.

For children of parents with college degrees, the expected education is higher in all sectors. But the difference between sectors is reduced by half between Catholic and public schools, and by about two-thirds between other private and public schools.

The lower panel of the table shows the difference in educational expectations between children of high- and low-education parents by school type. Here, the differences are greatest in the public schools and least in the Catholic schools with the other private schools in between. As with cognitive achievement, the Catholic schools come closest to meeting the ideal of the "common school." The public schools are furthest from this ideal. Children from differing educational backgrounds in Catholic schools are most alike in their educational expectations, while children from differing educational backgrounds in public schools are least alike in educational expectations. In other words, in the public schools, the educational plans of children with college-educated parents diverge more sharply from those of children with high school-educated parents than is true in any other type of school. The divergence is least in Catholic schools.

TABLE 6.3.4

ESTIMATED EDUCATIONAL EXPECTATIONS AT GRADES 10 AND 12 FOR STUDENTS WITH PARENTS OF DIFFERENT EDUCATIONAL LEVELS, DIFFERENT RACE, AND DIFFERENT ETHNICITY, OTHERWISE STANDARDIZED TO PUBLIC SOPHOMORE BACKGROUND[a]
SPRING 1980
(Standard error in parenthesis)

Comparison Category	Public Sector		Catholic Sector		Other Private Sector	
	10	12	10	12	10	12
1. Parental Education						
a. High school graduation ...	1.80	1.94	2.36	2.46	2.10	2.15
b. College graduation ...	2.80	2.89	3.05	3.09	2.90	3.12
2. Race and Ethnicity						
a. White/anglo ..	2.23	2.34	2.63	2.66	*	*
b. Hispanic	2.31	2.38	2.72	3.01	*	*
c. Black	2.44	2.64	2.98	3.11	*	*
3. Differences						
a. College vs high school parental education	.99 (.014)	.95 (.015)	.69 (.042)	.63 (.044)	.80 (.103)	.97 (.099)
b Anglo vs Hispanic	-.08 (.023)	-.04 (.026)	-.09 (.067)	-.34 (.071)	*	*
c. White vs Black	-.21 (.018)	-.30 (.020)	-.35 (.076)	-.45 (.079)	*	*

[a]Standardization follows procedures used in 6.2.3.

*Sample size too small to estimate reliably.

The gains in educational expectations from the sophomores to the senior year are small in all sectors and for both levels of parental education. They are least in the Catholic schools. But, as indicated in previous analysis, the retrospective questions examined earlier probably give better information about the development of education plans than does the sophomore-to-senior comparison.

A similar comparison can be made for the public and Catholic sectors between blacks and whites and Hispanics and Anglos with comparable backgrounds. As is ordinarily found with plans or expectations for higher education, table 6.3.4 shows that blacks have higher expectations than whites of comparable backgrounds, and Hispanics have higher expectations than Anglos of comparable backgrounds (statistically significant in 6 of the 8 cases). Here the estimates of the amount by which blacks exceed whites and Hispanics exceed Anglos are greater in the Catholic sector (though the difference is statistically significant only in one of four cases).

6.4 Summary of Outcomes

This chapter has examined two kinds of outcomes in public and private schools: cognitive outcomes, as measured by standardized test scores in reading, vocabulary, and mathematics; and plans for after high school, primarily plans for further education. The first question regarding these outcomes, in section 6.1, was just how the sectors differ in these respects. The second question, in sections 6.2 and 6.3, was whether being in a private school made any difference in cognitive achievement or educational aspirations, or whether the greater achievement and aspirations in the private sector were wholly due to selectivity.

When answering these questions, the qualifications about the other private school sample must be kept in mind. The findings for the sample of other private schools may very well not be generalizable to the population of such schools because of the small sample size, the heterogeneity of that population, and the sampling problems discussed in chapter 1. With this important point in mind, we may turn to these questions.

The answer to the first question is that achievement is somewhat higher, in both the sophomore and senior years, in Catholic schools and in other private schools than it is in public schools. Achievement in the high-performance private schools is considerably higher than that in the high-performance public schools, and both are higher than in either of the private sectors.

The differences between sectors in educational expectations and aspirations are similar to the differences in achievement. The sectors are ordered in the same way, with public school students having the lowest educational aspirations and those in the high-performance private schools having the highest aspirations. For the other post-secondary activity--work--the order is reversed. Among seniors who planned to work full time after graduation, a higher proportion in the public schools already had a job lined up. This suggests that the greater vocational resources and opportunities in the public schools, as shown in chapter 4, lead to a better connection with the world of work for those students who are going into the full-time labor force.

The second question, which attempted to separate effects of private schools on achievement and aspirations from selection into private schools, is examined in several ways. In the examination of effects on achievement, statistical controls on family background are introduced, in order to control

on those background characteristics that are most related to achievement. A large number of background characteristics is introduced, to control for selectivity-related differences. Although achievement differences between the private sectors and the public sector are reduced (more for other private schools than for Catholic schools), some differences remain. An examination followed of imputed growth from the sophomore to the senior year. Learning rates were calculated under three different sets of assumptions; two probably overestimate rates, thereby favoring the public sector relative to the private, and one probably underestimates rates, thereby favoring the private sectors relative to the public. Examining the ranges of these estimated rates shows that, under all assumptions, growth in vocabulary and mathematics achievement is greater in both private sectors than in the public sector. However, for the Catholic-public sector comparison in reading, the different estimates are in conflict. Thus the indication is that Catholic and other private schools have a non-trivial effect on bringing about higher cognitive achievement, wholly apart from their selectivity.

In addition, a greater homogeneity of achievement distinguishes Catholic schools from the public and other private schools. When students of parents with different educational backgrounds are compared, achievement levels are most comparable in the Catholic schools. Achievement levels are most divergent in other private schools, with public schools falling between the two private sectors. Also, the achievement gap between students from different educational backgrounds is less for seniors than for sophomores in Catholic schools, while it is slightly greater in public and other private schools. Controlling on parental income and education, a comparison of blacks and Hispanics in Catholic and public schools reveals several differences. As sophomores, these minority students achieve at a level closer to that of non-Hispanic whites in Catholic schools than in public schools. The achievement gap between blacks and whites and between Hispanic and Anglos is less for

seniors than for sophomores in Catholic schools while it is slightly greater in public schools. Altogether, the evidence is strong that Catholic schools function much closer to the American ideal of the "common school," educating children from different backgrounds alike, than do the public schools.

Turning to educational aspirations, the question arises whether the private-public difference shown in section 6.1 is wholly due to selection or is in part due to effects of the sector. Statistical controls on family background leave a Catholic-public difference for sophomores that favors Catholic schools, but no public-other private difference. No differential sophomore-senior growth is found, except for lower growth in Catholic schools. This result is suspect, however, because of a ceiling effect due to the higher level of aspirations among Catholic school sophomores, and because of differential dropout. An analysis that uses retrospective reports of seniors and sophomores about expectations of attending college in earlier years indicates that there is no greater growth of expectations in Catholic and other private schools than in public schools, though the evidence shows some inconsistencies. The analysis indicates that the background-standardized proportion planning to attend college in the sixth grade was (according to retrospective accounts) nearly the same in all sectors, and that most of the divergence between high school students in the different sectors occurred during the high or middle school grades. Overall, the evidence concerning differential effects of different sectors on level of college aspirations is less consistent and conclusive than concerning achievement.

Again, the Catholic schools show much greater homogeneity in the educational aspirations among students from different parental education backgrounds than do other schools. Here the other private schools are not distinguishable from the public schools in the divergence of educational expectations of students with low and high educational backgrounds.

CHAPTER 7

FACTORS AFFECTING COGNITIVE ACHIEVEMENT IN HIGH SCHOOLS

It is not sufficient to say that students are performing better in one sector of secondary education than another. The central question, for all schools, is why some produce better cognitive outcomes than others. We will treat that question in this chapter--though not comprehensively--by examining the degree to which, within each of the sectors, students in schools that differ from the average school in that sector--in ways that private schools differ from public schools--achieve more highly. This will allow us to identify school policies which increase achievement within each sector.

There is an additional value to such an analysis: it allows another test of the private school effects found in chapter 6. If it is true that the private sector is, on the average, more successful in increasing achievement, then within each of the sectors students should achieve more highly in schools that differ from the average school in ways that private schools differ from public schools--but only, of course, in those ways that make a difference for achievement. If the higher levels of homework that characterize private schools (chapter 5) are effective in leading to higher achievement, then those schools that have high levels of homework, whether they are Catholic, public, or other private, should be higher in achievement than other schools of that sector. If private schools are not more effective for cognitive achievement, or if some aspect of private schools other than homework is responsible for higher achievement, then achievement should not be higher in such an analysis. If, for example, private schools are more effective, but it is their smaller size (as shown in chapter 2) that makes them so, then smaller

schools in each sector, not schools with higher homework levels, should show higher achievement when student background is controlled.

Thus, this will be the general strategy: to examine the relations, within each of the sectors, of various factors that distinguish the Catholic and other private schools from the public schools. If certain of these factors do consistently make a difference in cognitive achievement, whatever the sector, then this is rather strong evidence both that the different school sectors do bring about differing achievement, and that one way they do so is through their difference on the factors that in the analysis show effects on achievement. The special value of this approach is that it can give some insight into the policies that, in any sector, affect achievement.

7.1 School size and achievement

For many years, educators have pointed to positive contributions of school size to achievement—for example, Conant's influential work, The American High School Today (1959). Yet, in the private and public school comparisons examined here, the enrollment and achievement patterns are opposite to those that prior research would have predicted: private schools tend to be smaller, yet they have higher levels of achievement. Thus, it is of some interest to know something about the effects of size within each sector.

It turns out that within each sector, size is positively related to achievement when family background and grade in school are controlled. The effect is very small and of marginal statistical significance in the public schools, and larger, but not statistically significant in the other private schools, but both larger and statistically significant in the Catholic schools. This is shown in table 7.1.1. Thus, it appears that public schools have a gain in achievement relative to private schools as a consequence of their larger size. The amount of gain they experience can be calculated by

TABLE 7.1.1

REGRESSION COEFFICIENTS FOR SIZE BY SECTOR AND SUBTEST, WITH PARENTAL EDUCATION, INCOME, RACE, HISPANIC ETHNICITY AND GRADE IN SCHOOL CONTROLLED: SPRING 1980

(Standard error for coefficient in parenthesis)

	Reading	Vocabulary	Mathematics
Public	.02 (.01)	.08 (.01)	.07 (.02)
R^2	.16	.20	.20
Catholic	.02 (.04)	.15 (.04)	.21 (.08)
R^2	.05	.10	.07
Other Private	.15 (.05)	.05 (.05)	.23 (.10)
R^2	.19	.23	.23

multiplying the regression coefficient for the effect of size by the difference in the average size of schools within sectors.[1] Table 7.1.2 shows the results of this analysis.

However, it may be that achievement gains associated with size could be depressed by school problems which accompany larger schools. Attendance problems, in particular, tend to be greater at large schools where it is difficult to monitor student behavior. The correlations of the three attendance problems with the logarithm of size is as given below in the three sectors:

	Public	Catholic	Other Private
Absenteeism	.02	-.02	.00
Lateness.....	.10	.00	-.20
Cutting class.....	.12	.00	.02

Statistical control of behavior problems in a regression of achievement on size is like a hypothetical experiment: what would be the effect of size on achievement if school staff were able to control the behavior problems that are correlated with size? The absence of correlation with size in the private schools (or in the case of lateness, in other private schools, a negative relation to size) shows that the question is not

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[1]For this analysis, five family background variables (mother's education, father's education, family income, race, and ethincity), grade, and the logarithm of school size were regressed, by sector, on the three achievement subtests. In the calculation described in the text, regression coefficients for the public school sector are used. This is because, as will be evident in the discussion, we want to examine the gain or the loss that public schools could expect through a change in average size to that of private schools.

TABLE 7.1.2

ACHIEVEMENT DIFFERENCES IN PUBLIC SCHOOLS RELATIVE TO PRIVATE SCHOOLS DUE TO THE LARGER SIZE OF PUBLIC SCHOOLS, WITH PARENTAL EDUCATION, FAMILY INCOME, RACE AND HISPANIC ETHNICITY CONTROLLED: SPRING 1980

(Standard error of difference in parenthesis)

Subtest	Public Relative to	
	Catholic	Other private
Reading	-.01 (.01)	-.03 (.02)
Vocabulary	.04 (.01)	.11 (.02)
Mathematics	.04 (.03)	.10 (.04)

hypothetical for staff in private schools. They apparently are able to control the behavior problems that in the public schools increase with size. This may be due to the greater degree of overall control that private schools are able to exercise, or to the smaller size of the schools.

Table 7.1.2 shows the gains—or, in the case of reading, losses—that public schools experience in relation to Catholic and other private schools because of their larger size. But comparing that to table 7.1.4, in which these three attendance variables are controlled, shows that these gains are smaller than they would be—and the losses larger than they would be—with behavior problems controlled. (It should be emphasized that the true effect of size might be less than indicated in this analysis because large schools in the public sector are positively associated with certain background variables that have not been statistically controlled, such as parental expectations and small family size, both of which are positively related to achievement.)

The positive effect of size, assuming that it is a true effect, might be due to any of several factors. It was once assumed, in fact, that larger schools meant better education. The arguments were that greater depth and breadth of program is possible in large schools, that specialized classes dealing with advanced topics, and better laboratory facilities are possible in larger schools. All these points are true; but the data suggest that these virtues of size are, in public schools, largely cancelled out by the inability to manage behavior problems as school size increases—an inability that has very likely grown since Conant made his survey of high schools in 1958.

7.2 Student behavior, school climate and achievement

The preceding analysis included only a small number of background variables, and did not include other possible school factors that might be responsible for some of the differences found. Initially our strategy was to

TABLE 7.1.3

REGRESSION COEFFICIENTS FOR SIZE, BY SECTOR AND SUBTEST, CONTROLLING ON ATTENDANCE BEHAVIOR, PARENTAL EDUCATION, INCOME, RACE, HISPANIC ETHNICITY: SPRING 1980

(Standard error for coefficient in parenthesis)

	Reading	Vocabulary	Mathematics
Public	.00 (.02)	.09 (.02)	.12 (.04)
R^2.....	.17	.20	.21
Catholic	.01 (.04)	.15 (.04)	.20 (.08)
R^2	.07	.11	.09
Other Private	.15 (.05)	.06 (.05)	.23 (.10)
R^2	.22	.25	.26

TABLE 7.1.4

ACHIEVEMENT DIFFERENCES IN PUBLIC SCHOOLS RELATIVE TO PRIVATE SCHOOLS DUE TO SIZE WITH ATTENDANCE BEHAVIOR, PARENTAL EDUCATION, FAMILY INCOME, RACE AND HISPANIC ETHNICITY CONTROLLED: SPRING 1980

(Standard error of difference in parenthesis)

Subtest	Public Relative to	
	Catholic	Other private
Reading	-.00 (.01)	.0 (.02)
Vocabulary	.05 (.01)	.13 (.02)
Mathematics	.06 (.02)	.17 (.04)

proceed in this manner--examining, sequentially, the effects of various school factors that differ between public and private schools, in separate regression equations. However, the resulting correlations between these various school characteristics suggests such a procedure might easily lead to incorrect inferences, attributing effects to one factor in the schools that are due to a factor that is correlated with the first but not included in the equations.[1] Consequently, in this section, we conduct a single analysis for the basic school factors to be examined. In addition, to reduce to the lowest possible level any spurious inferences resulting from differences in family backgrounds that are correlated with school factors, all of the family background factors used for the analysis, reported in table 6.2.1, are included in subsequent analyses. For each characteristic of schools and school functioning that is a source of possible differences in public and private school effectiveness, the following pair of questions is asked:

1. What is the level of that characteristic in Catholic or other private schools, for students with the same subjective and objective background characteristics as the average sophomore public school student? For example, the overall average difference between Catholic school and public school sophomores in the the amount of homework they do is the difference between 5.56 hours a week in the Catholic schools and 3.75 a week in the public schools. But for Catholic school sophomores with the same subjective and objective characteristics as the average public school sophomore, the 5.56 hours a week is reduced to 4.92 hours a week.[2] Thus, the difference in levels of homework for

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[1]We are indebted to Thomas DiPrete who first brought this matter to our attention. His analysis for another report from the High School and Beyond project, Discipline and Order in American High Schools, suggested that this might be the case.

[2]The standardized estimates of school functioning were calculated as follows: for each grade in the public and private sectors, we estimated separate regression equations for each of the school functioning variables using the seventeen family background characteristics. A background-standardized estimate for the level of school functioning in each grade and sector was calculated using the means of the public school sophomore characteristics and the effects of these background characteristics in the respective sector and grade.

the same type of student between the public and Catholic schools is 4.92 - 3.75, or 1.2 hours a week of homework.

2. What would be the expected difference in achievement in public schools if the school factor were at the level at which it is found in Catholic or other private schools for students of a given background (i.e., the background of the average public school sophomore)? For example, what increment in achievement would we expect to find in the public schools if the average public school student spent 1.1 more hours on homework? This is obtained by multiplying the 1.1 hours by the regression coefficient for the effect of homework on achievement in public schools, controlling for the effects of family background characteristics and other school factors.

In section 7.2.3 we will ask the same pair of questions for the average Catholic school sophomore, in schools that are like the average public school in these same school characteristics. We defer that analysis to the later section because of its obvious lesser importance to American high school students. Because the public schools enroll 90% of the total population of high school students, the background of the average public school sophomore is nearly that of the average American high school sophomore generally.

There are two questions of interest for each of the school factors that might contribute to the public-Catholic or public-other private difference in achievement: What is the difference between the level of that factor in the Catholic or other private schools and public schools, for students like the average public school sophomore? And what would be the expected difference in achievement in the public schools if that factor were at the level found in the Catholic or other private schools, controlling on family background and other school factors? We address these questions in turn.

7.2.1 Differences in public and private school functioning for a student like the average public school sophomore

Five areas related to school functioning were examined as potential means through which private schools obtain different levels of achievement from comparable students. These include:

1. Different coursework. This was measured in two ways. For mathematics in the senior year, it was possible to measure coursework in mathematics as the total number of courses a student has taken among the following: algebra 1, algebra 2, geometry, trigonometry, and calculus. As chapter 5 showed, higher proportions of private school seniors than public school seniors have taken each of these courses. Unfortunately, for the reading and vocabulary tests, and for the mathematics test for sophomores, there is no comparable measure of coursework. Instead, for these tests, having taken an honors English course (for the reading and vocabulary tests) or an honors mathematics course (for the mathematics test) was used as the measure of coursework. This is a poor measure of coursework differences between public and private schools, both because the proportions of students having taken an honors course were very similar in the three sectors and because an "honors" course means very different things in different school contexts.

2. Homework. As chapter 5 showed, the amount of homework in Catholic schools is greater than in public schools, and the amount in the other private sector is greater yet. For both sophomores and seniors it was possible to estimate the actual hours per week spent on homework.

3. Attendance in school and class. Chapter 5 showed that students in Catholic schools were absent much less often and were much less likely to cut class than students in public schools. Students in other private schools were between the Catholic and public schools on these measures of behavior.

4. Disciplinary climate. As discussed in chapter 5, students were asked three questions related to the disciplinary climate of the school: how interested the teachers are in students, how effective is school discipline, and the fairness of school discipline. Each school was characterized by the average of the responses for all the students in that school, and these averages were then used as measures of the school disciplinary climate. As chapter 5 showed, there were some differences in the average disciplinary climates in the three sectors.

5. Student behavior in the school. The behavior of all the students in the school may have some effect on what individual students learn, even controlling on the student's own behavior. The items used as a measure of school behavior were the averages, over the school, of sophomore responses to four questions asking the extent to which certain types of behavior occurred in the school: students not attending school, students cutting classes, students fighting, students threatening or attacking teachers. Alternative measures of

attendance and cutting classes were obtained by averaging over the school the students' responses concerning their own attendance and cutting classes, and characterizing each student by the average in the school, excluding his or her own responses.

Chapter 5 showed the differences in the levels of these school characteristics in public and private schools. The differences in these characteristics for students from the same family backgrounds are of interest here. More specifically, the analysis examined the differences for students who are like the average public school sophomore, so that the levels of the school characteristics are standardized to the public school sophomore population. The importance of this question lies in the fact that the family backgrounds of public, Catholic, and other private school students differ in both objective characteristics, such as parental education and income, and in subjective characteristics, such as the amount of student conversation with parents about schoolwork. In most of these ways, students in public schools have backgrounds that are less conducive to achievement than do students in private schools. Since measures of school functioning are in part determined by the backgrounds from which the students come, measures of school functioning must be adjusted or standardized by family background so that differences in achievement related to student background are not attributed to effects of school policies.

The background-standardized measures of school functioning are shown in table 7.2.1. The table shows that, with very few exceptions, (all in the percent taking honors mathematics or honors English) the Catholic and other private schools are higher in those characteristics that appear to be conducive to achievement (homework, teacher interest, fairness, or effectiveness[1]) and lower in those that appear inimical to achievement

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[1]Sophomores were asked to evaluate the strictness of discipline; seniors, the effectiveness.

TABLE 7.2.1

DIFFERENCES BETWEEN PRIVATE AND PUBLIC SCHOOLS IN STUDENT BEHAVIOR AND SCHOOL CLIMATE, STANDARDIZED TO FAMILY BACKGROUND CHARACTERISTICS OF PUBLIC SOPHOMORE STUDENTS: SPRING 1980[a]
(Standard error of difference in parenthesis)

Item	Catholic Minus Public		Other Private Minus Public	
	Sophomore	Senior	Sophomore	Senior
a. Coursework completed by students				
Proportion taking honors English	-.02 (.011)	.01 (.013)	-.08 (.014)	-.08 (.017)
Proportion taking honors Mathematics	.02 (.011)	.02 (.012)	-.07 (.015)	-.03 (.017)
Average number of advanced mathematics courses	DNA	.71 (.034)	DNA	.34 (.045)
b. Homework completed by students				
Average number of hours per week	1.17 (.092)	0.78 (.100)	1.31 (.123)	1.27 (.133)
c. Attendance by individual students				
Absent from school	-.43 (.028)	-.39 (.033)	-.06 (.037)	-.16 (.043)
Cut class now and then	-.20 (.009)	-.21 (.013)	-.04 (.013)	-.08 (.017)
d. Disciplinary climate as perceived by students[b]				
Teacher interest	.39 (.008)	.40 (.009)	.50 (.011)	.51 (.012)
Fairness of discipline	.17 (.008)	.18 (.007)	.09 (.009)	.12 (.010)
Effectiveness/strictness of discipline	.59 (.008)	.59 (.008)	.31 (.010)	.31 (.011)
e. Student behavior in school as perceived by sophomores[c]				
Absenteeism	.65 (.007)	.66 (.008)	.55 (.010)	.56 (.010)
Cutting class	.79 (.010)	.80 (.011)	.54 (.014)	.53 (.014)
Students fighting each other	.39 (.007)	.38 (.007)	.55 (.009)	.56 (.010)
Students threatening teachers	.17 (.002)	.16 (.002)	.18 (.003)	.17 (.003)

[a]Family background characteristics controlled are the seventeen used in table 6.2.1. The numbers in the table are obtained by first multiplying public school sophomore background means by regression coefficients from the regression of the variable in question on family background to obtain the expected level of the variable in question for that population, using regressions carried out on private school sophomores, private school seniors, and public school seniors and then subtracting the public school value from the private school value.

[b]Climate variables aggregated to school level.

[c]Behavior variables aggregated to school level; a high value implies that students perceiving this as happening rarely or never.

(absenteeism, cutting class, fighting, threatening teachers). The differences are generally smaller than those found in chapter 5 because standardization of family background brings the student behavior in the private schools closer to that in the public schools. Yet the differences remain in the same direction as those in chapter 5, when student background was not controlled.

7.2.2 Differences in achievement attributable to level of school functioning for a student like the average public school sophomore

Given these differences, it becomes possible to estimate the effect on achievement of being in a Catholic or other private school through each of the types of differences. This will show, for example, the estimated gain in achievement if the amount of homework done by public school sophomores were the same as that done by Catholic school students with similiar backgrounds (that is, an extra 1.2 hours a week), but other measured characteristics of the school remained the same.

In this way some or all of the achievement differences between private and public schools shown in table 6.2.1 may be accounted for or explained. For example, in table 6.2.1, the reading achievements in Catholic schools of sophomores with backgrounds similar to those of public school sophomores is .32 items greater than that of the public school sophomores. This difference of .32 items may be due in part to the 1.2 hours more homework in the Catholic schools. Carrying out the calculations, it can be seen that public school sophomores who are average in all the other measured family background characteristics and in a school that is average in the measured school characteristics get .05 more items on the reading test correct if they do the same amount of homework as similar students (i.e., background-standardized) do in the Catholic sector.

carrying out this examination, the amount of achievement explained by ables in each of the five areas of school functioning is added to give a total explained by the measured characteristics in that area.[1] Thus, in the areas of coursework, homework, attendance, disciplinary climate, and student behavior, the analysis results in a number that is the amount of achievement difference between public and Catholic or other private schools that can be accounted for by the differences in the level at which that factor exists in each sector. If the number is positive, this means that the average public school student would gain in achievement if the public school operated at the same level as the average Catholic or other private school. If the number is negative, it means that the average public school student would have lower achievement if the public school operated at the same level as the average Catholic or other private school.

Table 7.2.2 shows the overall difference in achievement in reading, vocabulary, and mathematics in public and private schools, controlling on student background, taken from table 6.2.1, and the amount of achievement difference that can be accounted for by the differences in each of the five areas. The sum of these five differential achievements (labelled "total accounted for" in the table) is the amount of achievement difference accounted for or explained by all these measures of school functioning. If that sum is less than the overall difference in achievement, there remains an unexplained achievement difference between the private and the public sector. If the total accounted for is greater than the overall difference (as, for example,

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[1] In terms of calculations, this was estimated by multiplying the difference in the two levels of functioning (seen in table 7.2.1) by the relevant regression coefficients in the public sector.

TABLE 7.2.2

ACHIEVEMENT DIFFERENCES BETWEEN PRIVATE AND PUBLIC SCHOOLS DUE TO VARIOUS AREAS OF SCHOOL FUNCTIONING, FOR STUDENTS WITH FAMILY BACKGROUNDS LIKE THAT OF THE AVERAGE SOPHOMORE IN PUBLIC SCHOOLS: SPRING 1980 [a]

	Catholic			Other Private		
	Reading	Vocabulary	Mathematics	Reading	Vocabulary	Mathematics
Sophomores						
Coursework	-.01	-.01	.04	-.06	-.06	-.17
Homework	.05	.04	.13	.06	.04	.15
Attendance	.04	.03	.15	.01	.01	.02
Disciplinary climate	-.03	-.08	-.17	.06	-.01	.13
Student behavior	.33	.11	.46	.33	.19	.57
Total accounted for	.38	.09	.61	.40	.16	.75
Overall (from table 6.2.1)	.32	.36	.58	.14	.33	.56
Seniors						
Coursework	.01	.01	1.08	-.06	-.06	.47
Homework	.04	.03	.02	.07	.05	.03
Attendance	.02	.00	.04	.01	.00	.02
Disciplinary climate	.01	.00	.02	.10	.07	.01
Student behavior	.20	.01	.25	.18	.11	.41
Total accounted for	.28	.05	1.41	.30	.17	.94
Overall (from tables 6.2.1 and 6.2.2)	.24	.56	.60	.40	.51	.74

[a]Standard errors are not calculated for this table and the next because of the special complications in doing so--since the school-functioning differences used in calculating the achievement differences are sample estimates (see table 7.2.2) as are the regression coefficients also used in the calculation.

evement for sophomores in the Catholic-public comparison—.32 and .38 accounted for), this suggests that there are other factors that partly compensate for the effects of these factors but are not included in the analysis—or that the characteristics of school functioning make more difference within the public sector than within the private sector. It is clear that the present analysis is imperfect, certainly excluding some factors that either augment or depress achievement in the public schools.[1]

Despite the existence of some differences between the overall differences and the total accounted for, the results shown in table 7.2.2 give an idea of the sources of the difference in achievement between the public and private sectors. Differences in the level of homework account for a small but consistent part of the differences in achievement; differences in the student's own attendance patterns account for a smaller part. The effects of differences in the disciplinary climate are inconsistent in direction and size. The effects of coursework are difficult to assess, since the measurement is weak except in the senior year for mathematics, where the taking of specific courses was measured and where the effect of coursework on achievement was found to be great. The one area in which the effect of public-private differences is most consistently strong is student behavior.

These measures of student behavior are school-level measures and it is important to clarify exactly what they refer to. To some degree, the student's own behavior is statistically controlled through the two measures of the student's own attendance, which constitute part (c) in table 7.2.1. If the

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[1]This is especially true for advanced mathematics courses, where the regression coefficient is 1.40 in the private sector and 1.51 in the public sector.

student's own behavior were fully controlled statistically, we could attribute this student behavior effect wholly to the effect of behavior problems among other students on the student's own achievement. As it is, such an inference is somewhat speculative, since the student's own behavior is not well controlled statistically. Yet there is a definite indication that these may be not only an interference of the student's own misbehavior on that same student's achievement, but also an effect of the general level of behavior disorder on the achievement of even those students whose behavior is good.[1]

A student's achievement may be affected by other students' behavior in several ways. Some of these are not completely understood, but the time a teacher must devote to disciplining students rather than teaching, how much repetition of material is required to have most of the students understand new material, and the distractions that disorder in the school impose on the student may all have an effect.

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[1]It is not fully clear just what is measured by these perceptions of student behavior. They are not direct measures of the actual rates of behavior problems, and they may be measures of some more subtle difference in the disciplinary character of the school. We conducted a partial test of this question for two of the four measures used in this analysis. Direct measures from the students are available for absenteeism and cutting classes. For each student we calculated a measure of the average absenteeism and percent who cut classes among the students in that student's school who were in the survey, excluding the student's own responses to these two questions. The effects of these two measures of attendance, as they differ between the public and private sectors, can be compared to the effects of the two measures obtained from sophomores' perceptions. Background-standardized differences between the public sector and the two private sectors on these two measures of attendance were calculated and the actual school-level behavior for each student was substituted in the general equation used in preparing table 7.2.2. The differences between the effects of sophomore perceptions of attendance behavior and the actual average attendance behavior of all other students was twofold. We found the effects of students' actual behavior (absences, cutting classes) to be consistently negative, but, generally, the amount of loss or gain in achievement is lower. This suggests that, although something more than actual student attendance is captured by the student perception of behavior, actual average school attendance does have a negative effect on school achievement.

In one of the areas, disciplinary climate, the inconsistent results present something of a puzzle. If the lesser degree of student behavior problems in private schools does make a difference in achievement then presumably the disciplinary differences between the public and private sectors should as well, because they influence student behavior. The last dependent clause may be the key to the puzzle of why disciplinary differences show inconsistent, sometimes negative effects. By statistically controlling student behavior and homework, we controlled on the intervening variables through which the school's disciplinary climate should have its effect. Thus the very paths through which a disciplinary climate can have its principal effect have been excluded from consideration in assessing the effect of the disciplinary climate. To see the true effect of the disciplinary-climate differences between public and private schools, we should examine not only their direct effect, but also their effect through student behavior.

A portion of this is shown in table 7.2.3 part (a), which presents the effect of public-Catholic and public-other private differences in disciplinary climate on the four items of perceived student behavior that were shown in table 7.2.1 part (e), again for a standardized public school sophomore student body. This does not capture the effects of disciplinary climate through the two measures of individual student behavior included in the analysis—that is, homework and attendance—but it does capture the effects through the paths of the four aspects of student behavior as perceived by sophomores.

Table 7.2.3 part (b) shows just how much of the differences in perceived absenteeism, class cutting, student fights, and threatening teachers between the public sector and the two private sectors can be accounted for by differences in disciplinary climate (see table 7.2.1 for the three items of disciplinary climate), for both sophomores and seniors. These "discipline-

TABLE 7.2.3

DIFFERENCES BETWEEN PRIVATE AND PUBLIC SCHOOLS IN LEVELS OF BEHAVIOR PROBLEMS DUE TO DIFFERENCES IN LEVELS OF DISCIPLINARY CLIMATE AND IN ACHIEVEMENT THROUGH EFFECTS OF BEHAVIOR PROBLEMS, WITH STUDENT BACKGROUND STATISTCALLY CONTROLLED:[a] SPRING 1980

	(a) Effects of Disciplinary Climate Differences	
	Catholic-Public	Other Private-Public
Sophomores:		
Effects on:		
Mean perceived absenteeism	.18	.13
Mean perceived cutting class	.29	.16
Mean perceived student fights	.15	.14
Mean perceived threaten teachers	.14	.11
Seniors:		
Effects on:		
Mean perceived absenteeism	.17	.13
Mean perceived cutting class	.19	.14
Mean perceived student fights	.14	.14
Mean perceived threaten teachers	.13	.10

	(b) Effects Through Behavior Problems in Achievement					
	Catholic			Other Private		
	Reading	Vocabulary	Mathematics	Reading	Vocabulary	Mathematics
Effects for:						
Sophomores	.13	.07	.25	.10	.07	.22
Seniors	.06	-.01	.13	.06	.04	.16

[a]Family background characterics controlled are the seventeen used in table 6.2.1 and listed in section 6.2.2.

related" differences in behavior can be compared to part (e) of table 7.2.1, to see what proportion of the difference in behavior is accounted for by these items of disciplinary climate. For example, the total difference between public and Catholic schools at the sophomore level in perceived absenteeism is sixty-five percent and the difference accounted for by disciplinary climate is .18, or twenty eight percent of the total. (It is important not to conclude that only this much of the variation in background-standardized attendance is a consequence of the discipline in the school; the three items used as indicators must certainly be only weak indicators of the disciplinary character of the school.)

With this information, it is possible to estimate the effect of the disciplinary climate through four aspects of school-level student behavior. This is shown in part (b) of the table. In nearly all cases, the positive effects of disciplinary climate through student behavior outweigh the negative direct effects shown in table 7.2.2. Thus, through the aspects of behavior shown in table 7.2.3 the disciplinary-climate differences between the public and private sectors lead to greater achievement in the private sectors, though the imperfections of measurement have very likely masked part of the effects.

7.2.3 Differences in school functions and in achievement attributable to school functioning for students like the average Catholic school sophomore

In the previous section we estimated school functioning differences for the average public school sophomore and the achievement losses associated with this different functioning in the public sector. Yet another question is whether school functioning differs for different types of students in each sector. In this section we discuss school functioning for a student with the average family background characteristics of Catholic school sophomore and its effect on achievement differences between the public and private sectors.

First, then, we ask what is the difference in the level of school functioning in the public and private sectors for this type of student? Table 7.2.4 shows these differences between Catholic and public schools and between other private and public schools. We find that in both private sectors students like the average Catholic school sophomore complete more homework, are absent less often, and are generally attending a school where the disciplinary climate is perceived more favorably and where there is less student misbehavior. The differences between table 7.2.3 and table 7.2.1 can be thought of as an interaction measure: the interactions of family background and school sector on level of functioning. Comparing the two tables, it is clear that this interaction is slight. The Catholic-public differences tend to increase slightly when the standardization is carried out to the average Catholic sophomore. The other private-public differences also tend to increase by this standardization, but somewhat less consistently than is true for the Catholic-public comparisons. Only in the cases of teacher interest, fairness of discipline, and perceived absenteeism do the differences between table 7.2.1 and table 7.2.4 appear to be non-trivial. In these few cases we can say that the sectors differ more for higher socioeconomic students (represented by the standardization to the average Catholic sophomore) than for the lower socioeconomic students.

The second question asks what would be the change in achievement outcomes if public schools increased their level of functioning for a student with the background characteristics of the average Catholic school sophomore. It is important to emphasize the limited nature of this question: we are asking, what is the effect of a given level of school functioning in the public sector for a student like a Catholic sophomore as compared with his or her expected achievement in the average Catholic or other private school?

TABLE 7.2.4

DIFFERENCES BETWEEN PRIVATE AND PUBLIC SCHOOLS IN STUDENT BEHAVIOR AND SCHOOL CLIMATE, STANDARDIZED TO FAMILY BACKGROUND CHARACTERISTICS OF CATHOLIC SOPHOMORE STUDENTS[a] SPRING 1980
(Standard error of difference in parenthesis)

Item	Catholic Minus Public		Other Private Minus Public	
	Sophomore	Senior	Sophomore	Senior
a. Coursework completed by students				
Proportion taking honors English	-.04 (.009)	.00 (.010)	-.09 (.018)	-.09 (.022)
Proportion taking honors Mathematics	.02 (.009)	.03 (.010)	-.06 (.020)	-.03 (.022)
Average number of advanced mathematics courses	DNA	.61 (.027)	DNA	.24 (.060)
b. Homework completed by students				
Average number of hours per week	1.27 (.075)	.96 (.079)	1.40 (.161)	1.45 (.175)
c. Attendance by individual students				
Absent from school	-.41 (.024)	-.41 (.026)	-.04 (.049)	-.18 (.056)
Cut class now and then	-.19 (.008)	-.21 (.010)	-.02 (.017)	-.08 (.022)
d. Disciplinary climate as perceived by students[b]				
Teacher interest	.44 (.014)	.44 (.007)	.54 (.012)	.55 (.016)
Fairness of discipline	.21 (.005)	.21 (.006)	.13 (.012)	.15 (.013)
Effectiveness/strictness of discipline	.62 (.006)	.61 (.007)	.33 (.014)	.34 (.015)
e. Student behavior in school as perceived by sophomores[c]				
Absenteeism	.69 (.006)	.70 (.006)	.59 (.013)	.60 (.014)
Cutting class	.80 (.008)	.80 (.008)	.55 (.018)	.54 (.019)
Students fighting each other	.42 (.006)	.42 (.006)	.58 (.012)	.60 (.013)
Students threatening teachers	.16 (.002)	.15 (.002)	.16 (.011)	.16 (.004)

[a]Family background characteristics controlled are the seventeen used in table 6.2.1. The numbers in the table are obtained by first multiplying public school sophomore background means by regression coefficients from the regression of the variable in question on family background to obtain the expected level of the variable in question for that population, using regressions carried out on private school sophomores, private school seniors, and public school seniors and then subtracting the public school value from the private school value.

[b]Climate variables aggregated to school level.

[c]Behavior variables aggregated to school level; a high value implies that students perceiving this as happening rarely or never.

Thus in comparing achievement, this contrast takes into account the effect that a higher family background has on achievement in the public sector as well as the effect of any given level of functioning.[1]

Table 7.2.5 shows the results of this analysis. In general we find fewer differences in achievement outcomes for this type of student than that found in our previous analysis for students like public school sophomores. It appears that a student's higher socioeconomic family background compensates to some degree for the lower level of functioning in the public sector, except in the area of student misbehavior. Here achievement gains in both private sectors are generally large. Coursework for seniors also brings about higher mathematics achievement in the private sectors. Other areas of school functioning appear to be less important to these achievement differences among students like Catholic sophomores, though indirect effects of disciplinary climate (through student behavior) shown in table 7.2.3 are still relevant to this type of student.[2]

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[1]An estimated $\hat{Y}$ for students like the average Catholic school sophomore was calculated using the public sector regression coefficients and the Catholic sophomore means for the 17 family background characteristics, the mean level of functioning (for example, homework) found in the public sector for that type of student, except in the case of the function under consideration. In this latter case, the mean level of school functioning in the Catholic or other private sector for this same type of student was used.

[2]Another way to consider the differences in public and private school functioning is to ask what would be the achievement losses for an average public school sophomore if he attended a private school that functioned like the average public school. An answer to this question both provides a partially independent check of the inferences made in the text on the basis of table 7.2.2 and gives some idea of the sensitivity of achievement in the private sector to each of these areas of school functioning. Appendix table A.4.15 shows the expected achievement losses in private schools that function at the level of public schools for the average public school sophomore in the five ways discussed in the text. Thus this analysis uses the private sector regression coefficients together with differences shown in table 7.2.1.

Without going into detail, the results are generally consistent with those of the public school analysis shown in table 7.2.2. However, the total rows show that achievement in the private sector is considerably more sensitive to the school's functioning than achievement in the public sector.

TABLE 7.2.5

EVEMENT GAINS OR LOSSES IN PRIVATE RELATIVE TO PUBLIC SCHOOLS FOR STUDENTS WITH FAMILY BACKGROUNDS LIKE THAT OF THE AVERAGE SOPHOMORE IN CATHOLIC SCHOOLS: SPRING 1980

	Catholic			Other Private		
	Read-ing	Vocab-ulary	Mathe-matics	Read-ing	Vocab-ulary	Mathe-matics
Sophomores						
Coursework	-.02	-.02	.04	-.06	-.06	-.13
Homework	.06	.04	.14	.07	.05	.16
Attendance	.04	.03	.14	.00	.00	.02
Disciplinary climate	-.03	-.08	-.18	.05	-.01	.12
Student behavior	.34	.12	.48	.34	.19	.58
Total accounted for	.38	.09	.62	.40	.16	.74
Overall (from table 6.2.1)	.32	.36	.58	.14	.33	.56
Seniors						
Coursework	.00	.00	.93	-.06	-.07	.33
Homework	.05	.04	.03	.08	.06	.04
Attendance	.02	.00	.04	.01	.00	.02
Disciplinary climate	.01	.00	.00	.10	.07	.00
Student behavior	.20	.02	.27	.19	.12	.42
Total accounted for	.30	.07	1.27	.32	.18	.81
Overall (from tables 6.2.1 and 6.2.2)	.24	.56	.60	.40	.51	.74

[a]Standard errors are not calculated for this table because of the special complications in doing so--since the school-functioning differences used in calculating the achievement differences are sample estimates (see table 7.2.2) as are the regression coefficients also used in the calculation.

7.3. School program enrollment and achievement

One of the aspects of school functioning that has a strong potential for affecting achievement is the placing of students in different programs. Generally, high school programs in the United States are identified as academic, general, or vocational. Academic programs are designed to provide credentials for admission to a four-year college, while general and vocational programs are not (although college admissions requirements have become so flexible that successful completion of an academic program is not now a prerequisite for admission to some four-year colleges). Vocational programs contain much more non-classroom curricular content than do general programs.

Yet placement in a particular program is not merely a potential determinant of subsequent achievement. It is also an indicator of past achievement and of future intentions. Because it is such an indicator, if schools in each sector used the same criteria in placing students in different programs it would be appropriate to use the student's program in school as an additional statistical control to eliminate bias due to selection.

There are, then, potentially two ways related to a student's program in which different schools can have different effects on achievement. If the program a student is in has an effect on that student's achievement, then schools with different policies for placing students in programs will produce different levels of achievement--even if they start with the same students. Second, programs labelled as academic (or general, or vocational) in one school may have different effects than a program labelled as academic (or general, or vocational) in another school.

The examination of school program can thus be of value in the study of differential effects of private and public sector schools in three ways. It can show whether the effects of the private sectors we have found can be

explained merely as private schools' enrolling more students who, whatever sector they were in, would be in an academic program. Second, it can show whether there appear to be different policies in different sectors for placing students in different programs. Third, it can show whether the consequences for cognitive achievement of being in a given program differ from sector to sector.

If schools in each sector use the same criteria in placing students in the different programs, and if the levels of cognitive achievement in a given program are the same in each sector, then the apparent effect of the private sector is merely due to initial selection of students. If either (or both) of these is not true, then the private sector has effects on achievement in either or both of the two ways described above.

The first question, then, is; Do schools in the three sectors use the same policies for placing students in the different programs? As a first indicator, let us suppose that the sophomore percentages enrolled in each program reflect only background differences in the three sectors, and not differences in school policy. Then we may get an indication of policy differences in the three sectors in moving students between programs by comparing the percentage of seniors in each program with the percentage of sophomores.

As we see in table 7.3.1 at the sophomore level, 30 percent of the public schools students are in an academic program, as are 62 percent of the Catholic school students, and 57 percent of the students in other private schools. For seniors, the percentage in an academic program in the public schools is 35 percent, in the Catholic schools 70 percent, and in the other private schools 70 percent—increases of 5 percent, 8 percent, and 13 percent, respectively. Since the dropout rate between sophomore and senior years is

TABLE 7.3.1

PERCENTAGE DISTRIBUTION FOR STUDENTS ENROLLED IN ACADEMIC, GENERAL OF VOCATIONAL PROGRAMS, BY GRADE AND TYPE OF SCHOOL: SPRING 1980

Type of Program	Public		Catholic		Other Private	
	10	12	10	12	10	12
Academic	30.2	34.5	61.8	69.5	57.2	70.4
General	47.2	39.0	32.4	21.0	37.2	21.6
Vocational	23.6	27.5	5.8	9.5	5.5	7.9

larger in nonacademic programs and is about twice as high in the public as the private sector, we would expect to see a greater increase in the percentage in an academic program in the public schools. But the reverse is true. Students in the private sector move into an academic program from their sophomore to their senior year, but comparable proportions of the public sector students are not making that move. This suggests that program placement policies do indeed differ in the public and private sectors.

The same question can also be examined through an analysis which statistically controls on family background and also asks whether there is a remaining sector effect on being in a given program. When being in an academic program as a senior was itself taken as a dependent variable in the public and Catholic schools, with the 17 background characteristics and school sector as independent variables, school sector was the strongest predictor.[1] With all these background characteristics controlled, a student in a Catholic school was still 25 percent more likely to be in an academic program than a student in a public school.

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[1]For reasons discussed in chapter 6, section 6.2.2, the appropriate logit analysis was not used here.

Moreover, the assumption granted earlier—that the sophomore program placement is purely a function of background and ability, and independent of school policy—is a very dubious one. If, for sophomores, being in an academic program is taken as a dependent variable with the 17 background factors which include both parents' expectations about college attendance and school sector as independent variables, Catholic school sophomores are 21 percent more likely to be enrolled in an academic program.

The second question, concerning school program policies, asks how students perform in the same program and from comparable backgrounds in public schools, Catholic schools, and other private schools. This assumption will introduce a bias against the private sector because the data discussed above strongly suggest that some students who would be in a general or vocational program in the public sector are in an academic program in the private sector.

Such an analysis was conducted only for the academic and general programs since vocational programs are infrequent in the private sector, and only for the public and Catholic schools. Using the same procedures and background variables used in previous analyses, and adding dummy variables for enrollment in vocational or general programs, achievement was estimated for students in academic and general programs in both the Catholic and public sectors, for students with backgrounds standardized to the average public school sophomore.

Table 7.3.2 shows that sophomores in academic programs in Catholic schools achieve at higher levels than their counterparts in the public sector, and that the differences for students in academic programs are statistically significant for all three tests. At the senior level the differences are in

TABLE 7.3.2

DIFFERENCES IN ACHIEVEMENT IN PUBLIC AND CATHOLIC SCHOOLS WITHIN SCHOOL PROGRAM, FOR STUDENT WITH AVERAGE BACKGROUND OF PUBLIC SCHOOL SOPHOMORE: SPRING, 1980

(Standard error of difference in parenthesis)

Subtest	General Program		Academic Program	
	Sophomore	Senior	Sophomore	Senior
Reading	.248 (.080)	.181 (.089)	.138 (.055)	.126 (.068)
Vocabulary ..	.306 (.064)	.397 (.076)	.235 (.058)	.399 (.059)
Mathematics .	.641 (.129)	.492 (.159)	.217 (.094)	.001 (.125)

the same direction, but are statistically significant only for vocabulary. In general programs, students in Catholic schools achieve more highly than those of comparable backgrounds in public schools in all three tests in both grades. In this case, the differences are statistically significant for all three tests in both grades. Furthermore, as the table indicates, the between-sector differences are consistently greater for students enrolled in the general program.

Thus, while there is evidence that students in an academic program from comparable backgrounds achieve somewhat more highly in Catholic schools than in public schools, the greater gap appears to exist in the general program. Consistent with this, students in a general program appear to be subjected to greater demands in Catholic schools than in public schools. Table 7.3.3 shows that when comparing coursework for seniors with comparable backgrounds in general programs, those in the Catholic sector take an average of .65 more advanced mathematics courses than seniors in the public sector. Absenteeism and cutting classes also show differences for the general program

TABLE 7.3.3.

DIFFERENCES BETWEEN CATHOLIC AND PUBLIC SCHOOLS IN STUDENT BEHAVIOR BY SCHOOL PROGRAM AND GRADE, STANDARDIZED TO FAMILY BACKGROUND CHARACTERISTICS OF PUBLIC SOPHOMORE STUDENTS:[a] SPRING 1980

	Academic		General	
	10	12	10	12
a) Coursework completed by students				
Percent taking honors English	-.10	-.06	-.03	.01
Percent taking honors mathematics	-.04	-.03	-.02	.01
Average number of advanced mathematics courses	DNA	.45	DNA	.65
b) Homework completed by students				
Average number of hours per week	1.18	.47	.93	.49
c) Attendance by individual students				
Absent from school	-.36	-.28	-.46	-.52
Cut class now and then ..	-.14	-.16	-.22	-.22

[a]Family background characteristics used in the analysis are the same seventeen characteristics identified in section 6.2; standardization procedures and estimated level of functioning follow those outlined for table 7.2.1.

students.

Thus, differences in school program placement policies make it more likely that students, whatever their background characteristics, will be placed in an academic program if they attend a Catholic school rather than a public school. Even though this is the case, students who are in academic programs in Catholic schools do better than students from comparable backgrounds in public schools in most comparisons, and at least as well in the others. It is for the students in the general program that being in a Catholic school makes the most difference in achievement.

Altogether, answers to the questions with which we began this section on school programs all point in the direction of greater effects of the private sectors than of the public sector on achievement. The student's program does not account for private-public differences in achievement. Private-sector policies put students in an academic program who would be in a general or vocational program in a public school. And then examining student achievement in academic and general programs in public and Catholic schools shows that achievement is consistently higher within each program in the Catholic schools.

The earlier sections of this chapter showed that there are at least two important ways in which private schools produce higher achievement outcomes than public schools. First, given the same type of student (i.e., with background standardized), private schools create higher rates of engagement in academic activities. School attendance is better, students do more homework, and students generally take more rigorous subjects (i.e., more advanced mathematics). The first two of these factors provide modestly greater achievement in private schools. The third, taking advanced mathematics courses, brings substantially greater achievement. The indication is

that more extensive academic demands are made in the private schools, for comparable students, leading to more advanced courses and thus to greater achievement. This is a somewhat obvious conclusion, and the statistical evidence supports it. Second, student behavior in a school has strong and consistent effects on student achievement. Apart from mathematics coursework for seniors, the greatest differences in achievement between private and public schools are accounted for by school-level behavior variables (i.e., the incidence of fights, students threatening teachers, etc.). The disciplinary climate of a school, that is, the effectiveness and fairness of discipline and teacher interest, affects achievement at least in part through its effect on these school-level behavior variables.

Although these answers are only partial, in that additional school factors may also explain the different outcomes in the sectors, they strongly suggest that school functioning makes a difference in achievement outcomes for the average student. And private schools of both sectors appear to function better in the areas that contribute to achievement.

This is not, however, equivalent to saying that policies which would facilitate enrollment in private schools would increase the average levels of achievement among American high school students. That is a much more complex question, and one that requires examining more fully the paths through which private schools may have their effects. The next section sketches out these paths, to indicate the kind of information necessary to answer the policy questions.

7.4. Models of school effects on cognitive achievement

By specifying the possible paths through which private schools may bring about greater achievement, we can locate the results of the present

report within that overall framework.

Figure 7.4.1 describes the possible ways that school sector may affect the achievement outcome of students. Our focus in this last chapter has been on school policies. The graph indicates first how school policies can affect achievement. School policies, such as level of homework, curriculum, and disciplinary practices, indirectly affect a student's achievement by influencing that student's behavior (see path 10). This is the most straightforward path. In addition, those policies directly affect student achievement (illustrated by path 11) and include such factors as teachers' skill or commitment. School policies can also affect a given student's achievement through their impact on other students' behavior (via path 9). That is, the same policies that increase one student's homework or decrease that student's absence or disorderly behavior can be intensified through the medium of other students' behavior (illustrated by the sequence of paths 9 and 12). This report suggests that these school policies vary between sectors, (particularly in the public and other private sector), as well as within sector, and are indeed related to student achievement.

There is, however, another path through which school type and school policies affect achievement: through the background and behavior of other students (see sequences 4-7-12-13 and 4-6-9-12-13). With a given level of tuition, coupled with a given income distribution, and specific policies of student selection, the school type "determines" the distribution of other students in the school. These background variables greatly affect the other students' behavior in the school (path 7), and may directly affect school policies (path 6), which in turn affect student behavior (paths 9 and 10). Other students' behavior can affect a given student's achievement in either of two ways: through their direct effect on that student's behavior (path 12),

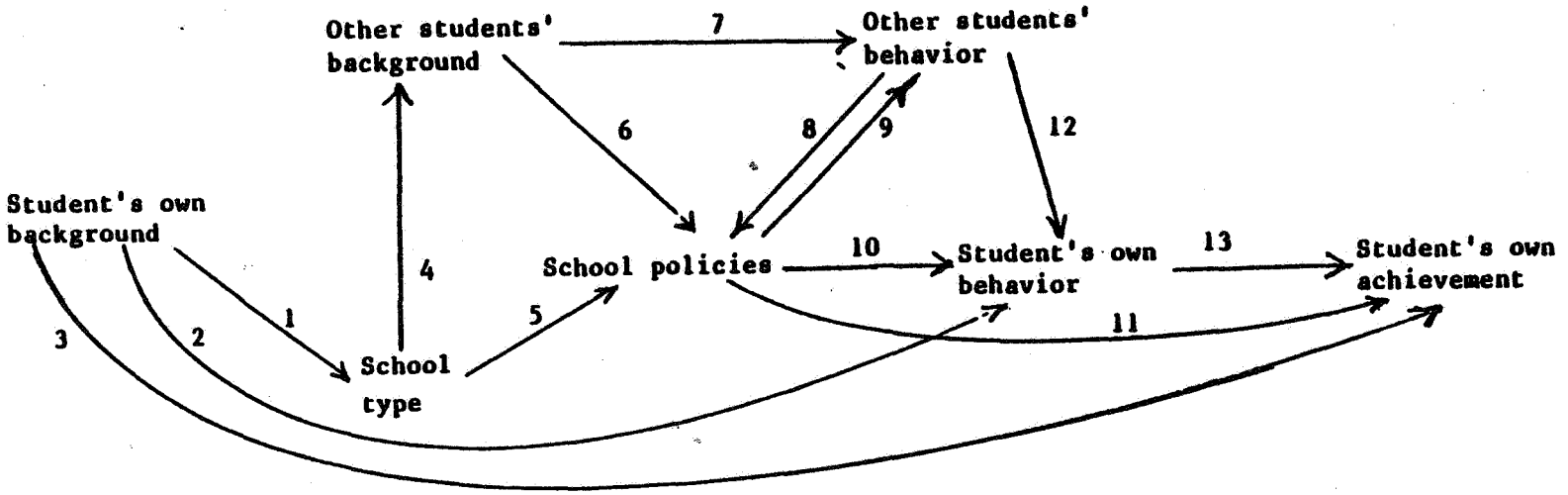

FIGURE 7.4.1

GENERAL MODEL OF STUDENT ACHIEVEMENT

(for example, a hard-working and committed student body will ordinarily generate commitment among its incoming members); or through school policies (path 8). A disobedient or truant student population can impede academic and disciplinary policies to the point that the demands are relaxed and the policies accommodated to the students' behavior. This is one aspect of the change that many schools underwent during the student revolt of the late sixties and early seventies.

If private schools were available to a larger segment of the population, then the effect of this alternative path, from school type to other students' background (path 4) becomes important to the question of whether achievement will be increased. In part, what is at issue in disagreements about the effects on achievement of making private schools available to a broader range of students lies in implicit beliefs about the relative importance of paths 4, 6, 7, 8, and 12 compared to 5, 9, 10, and 11. If the principal effect of the school type on achievement is through the sequence 4-7-12-13, or 4-7-8-10-12-13, or 4-6-10-13, then such broadening of availability would have little impact on achievement because the policy change would disrupt path 4. If a large component of the effect is through paths 5, 9, 10, and 11, then such increased access to private education should not dilute the school's impact on achievement. Furthermore, if the effects are through 9, 10, and 11, then any change that resulted in the appropriate changes in school policies, whether or not it had anything to do with private schools, would be effective in increasing achievement. Thus, where such things as curriculum and disciplinary policies have effects on student behavior and achievement that are independent of school type and student background, we can institute changes in any school that would affect achievement. It is for this reason that the results in this chapter are as

relevant to public schools as they are to private schools.

It is useful to review, in light of this path diagram, just what our analysis in the present chapter and earlier ones is designed to do in separating out the different type of effects. Tables 5.3.1 and 5.3.3 and Figure 5.3 showed the combined effects of path 5 from school type to school policies, and 4-7-8—that is, from school type through background through student behavior to policies. Similarly, tables 5.4.1, 5.4.4 and 5.4.5, and figure 5.4.1 show the combined effects of school policies to student behavior, and 4-7, 4-6-8 (and 4-7-12) from school type through student backgrounds to student behavior.

Table 7.2.1 is designed to separate out [in part (d)] the part of school type effect on school policies (called disciplinary climate in this chapter) that operates through path 5 and eliminates that part which operates by paths 4-6 or 4-7-8. That was done by statistically adjusting the policy differences between public and Catholic or between public and other private for differences in student background. The values shown in part (d) of table 7.2.1 are estimates of the amount of school policy (i.e., "disciplinary climate") difference due to school type directly through path 5.[1]

Similarly, parts (a), (b) and (c) are estimates of the effect of school type on the student's own behavior through school policies (paths 5-10 and 5-9-12) uncontaminated by the path 1-2—that is, by the student's own background). For example, the difference in homework done by sophomores in Catholic schools and sophomores in public schools is 1.9 hours per week; .8 hours of this is

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[1]The dependent variables in this analysis are school means of perceived policies, and thus did not differ within school. Consequently, even though the individual's background was statistically controlled, the effect is to control the backgrounds of all students. Thus the effects controlled out in the analysis are those through paths 4-6-12 plus a path (not shown) from student's own background to school policy.

accounted for by differences in family background, and 1.1 remains as the estimated differences due to policy differences between the two sectors. The diagram shows, however, that there is another uncontrolled path through which the observed difference due to school type might operate: path 4, and from there via path 7 or 6. What should be controlled in order for the values in rows 1, 2, and 3 to reflect only the effects through paths 5-10 and 5-9-12 is not only the student's <u>own</u> background, but also the backgrounds of other students in the school. If that had been done in table 7.2.1 then the values in these rows would be estimates of the effect of school type via path 5-10 and 5-9-12.

Part (e) of table 7.2.1 is intended to provide estimates of the effect of school type via path 5-9 to other students' behavior, by controlling on other students' backgrounds and thus blocking path 4-7.[1] However, some of the items in this area not only include other students' behavior, but also the student's own. As a consequence, the items in part (e) are measures of the effect of school type via both paths 5-10 and 5-9.

Then, table 7.2.2 is designed to show the direct effects of school types on achievement through the student's behavior (rows 1, 2, 3 in the table; paths 5-10-13 and 5-9-12-13), through school policies directly (row 4) in the table; paths 5-11) and through the student body behavior (row 5) in the table; path 5-10). The last of these is ambiguous. If the measures were indicative of average student behavior in the school, they could then be modified to exclude the student's own behavior, and would truly be measures of other students' behavior in the school. Consequently, a regression analysis

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[1]Since the dependent variable is at the level of the school in these cases, the student backgrounds controlled in this analysis effectively become the aggregate student background in the school.

including the student's own behavior and the other students' behavior, measured in this way, would give the effects of his own behavior on his achievement and the effect of other students' behavior on his achievement. The ways in which the latter might occur are numerous but, perhaps most importantly, behavior in the classroom affects how much the teacher can teach and the level of distraction for any given student.

However, since the components of "student behavior" as measured and used in tables 7.2.1 and 7.2.2 are averages of student perceptions about behavior problems in the school, and because for two of these (fights among students and students threatening teachers) there are no measures of the individual's own behavior, the effects shown for "student behavior" in table 7.2.2 cannot be unambiguously interpreted as effects of <u>other</u> students' behavior. Nevertheless, it appears likely that some part of this effect (which is the strongest shown in the table in nine of the twelve analyses) is due to other students' behavior. This would mean that there is a missing path, say path 14, in figure 7.4.1, from other students' behavior directly to the student's achievement.

The upper part of table 7.2.3 shows the effects of school policies (as measured by "disciplinary climate" differences) on various aspects of student behavior, as indicated by path 9. The lower part shows the effects of those policies on a student's achievement through the student behavior in the school—that is, through both the student's own behavior and that of other students, paths 10 and 12.[1]

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[1]The effects of school policies on a student's achievement through his own and other students' behavior (that is, through paths 10-13 and 9-14) cannot be distinguished here. If the methods used had allowed distinguishing the effects on achievement of the students' own behavior and that of the other students (path 13 and missing path 14), then the effect of school policies through other students' behavior and own behavior would simply be in

The analysis as carried out in this chapter does not, of course, allow for distinguishing the sizes of the effects through all the paths shown in figure 7.4.1. It only begins to allow distinguishing qualitatively between the kinds of effects identified by the various paths shown in figure 7.4.1. Most important for purposes of policies vis-a-vis private schools, of course, is the relative importance of the direct effects of school type on school policy (path 5) and the indirect effects which begin with path 4, the effect of school type upon other students' backgrounds. Policies that would affect the social composition of the students attending schools in the private sector would change path 4, but would not change path 5.

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proportion to the sizes of paths 14 and 13. This must be so, since the effect of school policies, a variable that is constant for all students in the school, on a given student's behavior and on the average behavior of all students cannot even in principle be distinguished.

CHAPTER 8

CONCLUSION

In chapter 1 of this report, we examined a number of premises underlying policies that would increase the role of private schools and a number of underlying policies that would decrease their role. Perhaps the best way to conclude is to review those premises, to see just which premises this report has provided evidence on, and what can be concluded from the evidence about each premise. In addition, other results were found along the way, some of which provide additional information that bears upon the overall policy questions.

Premise underlying policies that would increase the role of private schools

1. Private schools produce better cognitive outcomes than do public schools (chapter 6).

The evidence from chapter 6, supplemented by evidence from chapter 7, is that private schools do produce better cognitive outcomes than public schools. When family background factors that predict achievement are controlled, students in both Catholic and other private schools are shown to achieve at a higher level than students in public schools. The difference at the sophomore level, which was greater for Catholic schools than for other private schools, ranged from about a fifth of the sophomore-senior gain to about two-thirds the size of that gain (i.e., from a little less than half a year's difference to something more than one year's difference). This evidence is subject to a caveat: despite extensive statistical controls on parental background, there may very well be other unmeasured factors in the self-selection into the private sector that are associated with higher achievement.

We examined gains from the sophomore to the senior year in the three sectors; we introduced three differing sets of assumptions for examining this growth, to get a range of estimates. Two sets of assumptions probably favor the public sector and one probably favors the private sectors. Under all sets of assumptions, achievement growth was greater in both private sectors than in the public sector except for reading in the Catholic schools, which gave different results under different assumptions.

A caveat to all these results is shown by the high-performance public and private schools. Performance was much higher in both of these sets of schools than in any of the three sectors (section 6.1), although these schools could not be separately studied in the extended analysis of section 6.2 because of ceiling effects in achievement scores.

2. Private schools provide better character and personality development than do public schools (chapter 5).

Little evidence on character and personality development was provided in this report. Students in other private schools show slightly higher levels of self-esteem as sophomores and higher gains from the sophomore to senior year in fate control than students in public or Catholic schools. The inference that there is greater growth on both these dimensions in other private schools is strengthened by the fact that students in high-performance private schools showed even higher levels as sophomores, and similarly high sophomore-senior gains, while students in high-performance public schools did not, despite the fact that the parental backgrounds of students in the latter schools are higher than those in other private schools. The fact that the other private and high-performance private schools have less than half the student-teacher ratio than schools in the other sectors suggests that the difference might be due to this. Two points should be recalled, however, in assessing this evidence: first, the other private sector is especially

diverse; and second, our sample of schools in that sector is especially weak. Thus the conclusions on this point must be regarded as merely an indication that further examination is warranted.

3. Private schools provide a safer, more disciplined, and more ordered environment than do public schools (chapter 5).

The evidence is strong that this premise is true. The greatest difference found in any aspect of school functioning between public and private schools was in the degree of discipline and order in the schools (sections 5.3 and 5.4). The Catholic and other private schools appear somewhat different in their discipline and behavior profiles, with students in other private schools reporting more absences and class-cutting but also more homework, fewer fights among students, and greater teacher interest in students. However, in all these respects, both sectors showed greater discipline and order than the public schools.

4. Private schools are more successful in creating an interest in learning than are public schools (chapter 5).

There is little evidence to confirm or disconfirm this premise in the report. The sectors differ only slightly in student responses to the two direct questions concerning interest in school, and there is not much to be inferred from indirect evidence presented in the report.

5. Private schools encourage interest in higher education and lead more of their students to attend college than do public schools with comparable students (chapter 6).

The evidence on this premise is toward a positive answer, but it is not fully consistent. There is evidence that students have higher college aspirations and expectations in private schools than do students from comparable backgrounds in public schools, but it is not clear to what extent the private schools function to generate these overall higher aspirations and expectations. The evidence does indicate that Catholic schools function to decrease the differences between students from different social backgrounds.

6. Private schools are smaller and thus bring about greater degrees of participation in sports and other activities than do public schools (chapter 5).

The evidence shows that this premise may be true for other private schools (though again a caution is necessary about generalization from the weak sample of other private schools). The premise is not true for Catholic schools compared to public schools. The fact that Catholic schools are smaller in size than public schools does not result in increased participation in extracurricular activities.

7. Private schools have smaller class size, and thus allow teachers and students to have greater contact (chapter 4).

The other private schools have sharply lower student-teacher ratios than the public schools, while the Catholic schools have slightly higher ratios. There are fewer than half the students per teacher in other private schools than in public or Catholic schools (table 4.2.1). No direct evidence on contact between students and teachers is presented.

8. Private schools are more efficient than public schools, accomplishing their task at a lower cost.

The report contains no evidence on this premise.

Premises underlying policies that would decrease the role of private schools

1. Private schools are socially divisive along income lines, creaming the students from higher income backgrounds, and segregating them into elite schools (chapter 3).

The evidence on this premise works in two directions. First, among the three major sectors, the other private schools contain students from somewhat higher income backgrounds and the Catholic schools contain students from slightly higher income backgrounds than the public schools. The differences are primarily at the highest and lowest income levels, with all three sectors having a majority of students in a broad middle-income category ranging from $12,000 to $38,000 a year, and similar proportions at different

levels within this range. Second, the internal segregation by income within each sector goes in the opposite direction with the public sector showing slightly higher income segregation than either the Catholic or other private sectors. However, income segregation is not high within any sector. The end result of these two forces acting in opposite directions is that U.S. schools as a whole show slightly greater segregation by income than would be the case if private school students of differing income levels were absorbed into the public schools in the same way that public school students of differing income levels are currently distributed among schools.

2. Private schools are divisive along religious lines, segregating different religious groups into different schools (chapter 3).

The evidence is strong that this is true. Besides the 30 percent of private schools that are Catholic, enrolling 66 percent of all private school students, 25 percent of private schools, enrolling 12 percent of private school students, are affiliated with other religious denominations. Examining religious segregation solely in the Catholic/non-Catholic dimension, the report shows that the great majority of Catholics are in public schools, but that over 90 percent of the students in Catholic schools are Catholic. Within each sector, the Catholic/non-Catholic segregation is least in the Catholic schools themselves, greatest in the other private schools. The overall impact of the between-sector segregation and the differing segregation within sectors is, as might be expected, that schools in the United States are more segregated along Catholic/non-Catholic lines than they would be if private school students were absorbed into the public schools.

3. Private schools are divisive along racial lines, in two ways: they contain few blacks or other minorities, and thus segregate whites in private schools from blacks in public schools; and the private sector itself is more racially segregated than the public sector (chapter 3).

The evidence shows that the first of these premises is true with respect to blacks but not with respect to Hispanics and that the second is not true with respect to blacks or Hispanics. The end result with respect to Hispanics is that the segregation of U.S. schools is a little different from what it would be if there were no private schools.

Catholic schools enroll less than half as high a proportion of blacks as the public schools, and other private schools only about a quarter as high a proportion. Internally, however, the blacks and whites in the private sectors are considerably less segregated from one another than they are in the public sector. The end result of these two opposing forces, between-sector and within-sector, is that the segregation of black and white students in the U.S. schools is no greater and no less than it would be if there were no private schools, and their students were absorbed into the public sector, distributed among schools as public sector black and white students are now distributed.

4. Private schools do not provide the educational range that public schools do, particularly in vocational and other nontraditional courses or programs (chapter 4).

The evidence on this premise is that it is correct. Schools in both the Catholic and other private sectors provide primarily academic programs and have few vocational or technical courses. Even in academic areas, however, some of the smaller schools in the other private sector have a limited range of subjects, as exemplified by the fact that 44 percent of students in the other private sector are in schools with no third year foreign language courses. The lesser educational range of the private sector is also shown by the more comprehensive character of the high-performance public schools compared to the high-performance private schools.

5. Private schools have a narrower range of extracurricular activities, and thus deprive their students of participation in school activities outside the classroom (chapter 5).

This premise is almost the direct opposite of premise 7 on the other side, so the answer is the same as was given there. Students in Catholic and public schools show about the same amount of participation in extracurricular activities, while students in other private schools show more. Thus this premise is not correct.

6. Private schools are unhealthily competitive, thus public schools provide a healthier affective development (chapter 5).

The report provides no direct evidence on this premise, but the indirect evidence suggests that something like the reverse is true for the comparison between the other private and public schools. (See premise number 2 in the preceding section.)

7. Facilitating the use of private schools would aid whites more than blacks and those better off financially at the expense of those worse off; as a result, it would increase racial and economic segregation (chapter 3).

It is not possible with this data to directly answer this question. The results of the analysis carried out in chapter 3 indicate that family income exercises an important independent influence on the probability that a given student will receive a private education particularly in a Catholic school. The effect of income on probability of enrollment in Catholic schools is positive and significantly stronger for blacks than for whites since blacks have a substantially lower average income than whites. Thus, the evidence indicates that the current underenrollment of blacks in private secondary schools is, to a significant extent, attributable to their lower income.

Insofar as the effect of family income reflects a price effect, these findings suggest that policies designed to reduce the cost of private education to families would result in a reduction of the economic and racial segregation that is currently found between sectors. This is because lower-income students and blacks would be expected to shift into Catholic schools at

rates that are equal to or greater than higher-income and white students. Further research, using data that are more adequate to the problem at hand, may find that such an extrapolation is not valid. The available evidence strongly suggests, however, that a significant interest in the alternative that private schools represent is present among minorities and lower-income families.

Additional results relevant to the policy question of facilitating or constraining use of public schools:

1. Catholic schools more nearly approximate the "common school" ideal of American education than do public schools, in that the achievement levels of students from different parental educational backgrounds, of black and white students, and of Hispanic and non-Hispanic white students are more nearly alike in Catholic schools than in public schools or other private schools. In addition, the educational aspirations of students from these different backgrounds are more alike in Catholic than in public or other private schools.

2. Important factors in bringing about higher scholastic achievement in private schools than in public schools are the greater academic demands and more ordered environment in the private schools. The evidence shows not only that the sectors differ greatly on these dimensions, but also that within the public schools, students who are better disciplined and are in schools with more ordered environments achieve more highly. These results provide information that is relevant not only to private-school policies, but also to the functioning of all schools, public or private.

It may or may not be useful to attempt to sum up the overall implications for the premises underlying policy arguments to facilitate or constrain the use of private schools. Some of the premises on each side are confirmed, some on each side are disconfirmed. It is hard, however, to avoid the overall

conclusion that the factual premises underlying policies that would facilitate use of private schools are much better supported on the whole than those underlying policies that would constrain their use. Or, to put it another way, the constraints imposed on schools in the public sector (and there is no evidence that those constraints are financial, compared with the private sector) seem to impair their functioning as educational institutions, without providing the more egalitarian outcomes that are one of the goals of public schooling.

APPENDIX A

STATISTICAL REFERENCES

A.1 Calculation of Standard Errors of Estimates

Neither standard errors nor confidence intervals are reported in the tabulations and analyses of this report. Instead, this section presents information that allows calculation of approximate standard errors for most percentages based on student data.

The general equation for calculating the approximate standard error of a percentage is:

$$s.e.(p) = A \sqrt{p(100-p)/n}$$

where p is the percentage for which the standard error is to be calculated; s.e.(p) is the approximate standard error of p; A is a correction factor, which increases with the departure of the sample form a simple random sample through clustering or other aspects of the sample design; and n is the unweighted number of students in the particular class over which the percentage is calculated. (For example, table 3.1.1 estimates that 5.8 percent of sophomores in Catholic schools are black. The unweighted number of sophomores in Catholic schools, which is 2,831--see table A.1.1 below--is the correct value of n for calculating the standard error of this percentage.[1])

The values of A and n for classes on which most of the percentages in this report are based are given in table A.1.1. When percentages are based on different classifications or on subclassifications within each of these classifications, it is appropriate to use the subclass

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[1] This does not take into account sample size reduction by nonresponse. Throughout the report, nonresponses are excluded from the base on which the percentage is calculated. An approximate reduction of n for nonresponse can be determined from the marginals provided in "High School and Beyond Information for Users, Base Year (1980) Data," available from NCES.

TABLE A.1.1

CORRECTION FACTORS AND SAMPLE SIZES FOR CLASSES ON WHICH MOST PERCENTAGES FROM STUDENT DATA IN REPORT ARE BASED

	U.S. Total	Public	Private			High Performance Schools	
			Total[a]	Catholic	Other Private	Public[b]	Private[c]
Sophomores							
A (correction factor) ...	1.614	1.529	2.160	1.942	2.597	1.614	2.597
n (sample size)	30,263	26,448	3,462	2,831	631	370	353
Seniors							
A (correction factor) ...	1.620	1.509	2.255	2.038	2.689	1.620	2.689
n (sample size)	28,465.	24,891	3,248	2,697	551	311	326

[a]The correction factor A for total private is calculated as an average of the Catholic and other private correction factors, weighting the Catholic correction factor by 2 and the other private by 1.

[b]The high performance public correction factor is taken to be the same as that for the public sector as a whole.

[c]The high performance private correction factor is taken to be the same as that for the other private sector.

TABLE A.1.2

APPROXIMATE STANDARD ERRORS FOR PERCENTAGES BASED ON PRINCIPAL CLASSIFICATIONS USED IN REPORT

	U.S. Total	Public	Private			High Performance Schools	
			Total	Catholic	Other Private	Public	Private
Sophomores							
p = 50 percent	0.46	0.47	1.84	1.82	5.17	4.20	6.91
p = 90 percent or 10 percent	0.28	0.28	1.10	1.09	3.10	2.52	4.15
Seniors							
p = 50 percent	0.48	0.48	1.98	1.96	5.73	4.59	7.45
p = 90 percent or 10 percent	0.29	0.29	1.19	1.18	3.44	2.76	4.47

TABLE A.1.3

NUMBERS OF STUDENTS AND SCHOOLS IN SAMPLE, FOR MAJOR SUBCLASSES USED IN REPORT

Case Unit	U.S. Total	Major Sectors			High-Performance Schools	
		Public	Catholic	Private	Public	Private
Total students	58,728 (58,049)[a]	51,339	5,528	1,182	682	679
Sophomores	30,263 (29,910)[a]	26,448	2,831	631	370	353
Seniors	28,465 (28,139)[a]	24,891	2,697	551	311	326
Number of schools	1,015 (1,004)[a]	894	84	27	12	11

[a]Excluding high-performance private schools.

TABLE A.1.4

WEIGHTED NUMBERS OF STUDENTS AND SCHOOLS IN SAMPLE, FOR MAJOR SUBCLASSES USED IN REPORT

Case Unit	U.S. Total	Major Sectors			High-Performance Schools	
		Public	Catholic	Private	Public	Private
Total students	6,852,441 (6,850,525)[a]	6,195,294	429,217	226,014	88,788	1,916
Sophomores	3,787,782 (3,786,775)[a]	3,436,168	228,417	122,190	44,889	1,007
Seniors	3,064,659 (3,063,750)[a]	2,759,126	200,800	103,824	43,899	909
Number of schools	20,316 (20,303)[a]	15,766	1,571	2,966	128	13

[a]Excluding high-performance private schools.

size together with the largest correction factor of those shown in the table that could apply to the subclass.

The equation for calculating standard errors, together with the data shown in table A.1.1, were used to calculate approximate standard errors for percentages of 50 percent, 10 percent, and 90 percent (the latter two of which have the same standard error). These are given in table A.1.2.

It should be emphasized that these standard errors are approximations intended merely to provide guidance as to the confidence interval around a percentage estimate, or the chance that a difference between two percentages could be due to sampling error.

For estimation of approximate standard errors for data from the school questionnaires, a conservative estimate can be obtained by assuming A to be the same as for student data, and taking n from the number of schools shown for the relevant class in table A.1.3; a non-conservative estimate can be obtained by assuming A=1 for all classes of schools.

A.1.2 Calculation of Standard Errors for Complex Statistics

Previous research suggests that it is unnecessary to adjust the estimates of standard errors of complex statistics, such as regression coefficients, for the effects of a stratified clustered sampling design. Kish and Frankel (1974) found that in the case of complex statistics, the design effect reduces to one.

In our analysis of school outcomes and factors affecting achievement outcomes (chapters 6 and 7), we estimated standard errors under the general assumption of statistical independence of elements used in general statistical methods. However, it did seem important

to test, at least in some limited way, the applicability of Kish and Frankel's previous work on design effects for complex statistics to the instance of an estimated Y.

Given the excessive cost associated with empirical estimates, the calculations were limited to the private sector standardization carried out for table 6.2.1 following the balanced repeated replication method developed at the U.S. Census Bureau. In general, the sample variance is empircally calculated by taking differences in half-sample estimates of the sample statistic, in this case, Y. Y is of course a function of the regression coefficients associated with each half-sample and the means used to standardize the estimates of achievement.

A second order estimator was calculated as follows:

$$\text{VAR } (g(S)) = \frac{1 - f}{4k} \sum_{i=1}^{k} [g(H_i) - g(C_i)]^2$$

where S denotes the entire sample; k, the number of half-sample pairs; H_i, the ith half-sample formed by including on of the two primary selection groups from each of the strata; C_i, the complement half-sample; and some increment adjustment (not used in the estimate).

Twelve pairs of half-samples were drawn, following an orthogonal design matrix outlined by Plackett and Burman (1946). Within each of the eight private sector stratum, schools were randomly assigned to one of two groups. For those schools classified as self-representing, students within the school were randomly assigned to one of these two groups. Then, following the design matrix, schools were placed in one of the half-samples for each of the twelve pairs.

TABLE A.1.5.

ESTIMATED AND EMPIRICAL STANDARD ERRORS FOR STANDARDIZED ACHIEVEMENT IN CATHOLIC AND OTHER PRIVATE SCHOOLS

Subtest	Catholic		Other Private	
	10	12	10	12
Reading:				
Estimated	.0469	.0517	.0632	.0692
Empirical	.0489	.1095	.1354	.2218
Ratio	1.043	2.118	2.142	3.2052
Vocabulary:				
Estimated	.0439	.0456	.0591	.0614
Empirical	.0909	.0632	.1735	.2088
Ratio	2.071	1.386	2.936	3.401
Mathematics:				
Estimated	.0883	.0965	.1191	.1293
Empirical	.1063	.1122	.3936	.2905
Ratio	1.204	1.163	3.305	2.247

Table A.1.5 shows the results of this analysis along with the standard errors originally estimated for table 6.2.1 and the ratio of the empirical and estimated standard errors. The ratio of the standard errors is the design effect for the estimated Y. The results show that for the Catholic sector the design effect approximates one in four out of six of the estimates. However, for the other private sector, the design effect is substantially larger; it is approximately three in four out of six of the estimates. For the other private sector then, the estimates are substantially larger than those associated with complex statistics. This provides further evidence regarding the caution one should use in making inferences from the other private sector sample.

A.2 Calculation of Measures of the Distribution of Students within Sectors

The measures employed in chapter 3 for describing variations in student mix among schools within a sector are described below. The measure of interracial contact within a sector is constructed as follows. If we number the schools in the sector 1, ...k, ...n, and consider the first school, there is a given proportion of whites in that school. Call this p_{1w}. There is also a certain number of blacks in the school. Call this n_{1b}. Then, for this number of blacks, the proportion of whites in their school is p_{1w}. If we weight this proportion by the number of blacks, and average over all schools, we obtain the desired measure, which

we will call s_{bw}, the proportion of white children in the school of the average black child.

$$s_{bw} = \frac{\sum_{k=1}^{n} n_{kb} p_{kw}}{\sum_{k=1}^{n} n_{kb}} \qquad (1)$$

or for groups i and j

$$s_{ij} = \frac{\sum_{k=1}^{n} n_{ki} p_{kj}}{\sum_{k=1}^{n} n_{ki}} \qquad (2)$$

This measure is affected not only by the degree of segregation between two groups among schools in the sector, but also by the overall proportion of students in each group. If there are few black children in a sector, for example, then whether or not there is the same proportion of blacks in each school, the average white student will have a small proportion of black children in the same school. Because of this, it is valuable to have a measure of just how far from an even distribution across the schools the actual distribution is, that is, a measure that is standardized for the number of whites and blacks in the school type. Such a measure can be constructed, with a value of 0 if there is no segregation between the two groups in question and a value of 1.0 if segregation is complete.

The standardized measure is constructed as follows. Let the proportion of children from group j in the sector be p_j. If the same proportion of children from group j were in each school, then s_{ij} would be equal to p_j. If the children of group j were all in schools by themselves, totally isolated from children of group i, s_{ij} would be 0. Thus a measure of how far s_{ij} is from p_j is $(p_j - s_{ij})/p_j$. This we

will call r_{ij}, which may be thought of as a measure of segregation. The formula is:

$$r_{ij} = \frac{p_j - s_{ij}}{p_j} \qquad (3)$$

It is important that, although the standardized measure is a measure of the segregation of children in one group from those in another, it is the unstandardized measure that measures directly the presence of children from one group in schools attended by children of another group. Thus the proportion of black schoolmates for the average white child may be low, without the measure of segregation being especially high.

In order to compute these measures from the High School and Beyond data, sophomores and seniors are combined to give a more precise estimate. Students are assigned their design weights (which may differ for sophomores and seniors), and the proportion of each relevant group in the school is estimated from the weighted numbers in each group. For estimating equation (2), n_{ki}, the number of students from group i in school k, is the number weighted by the design weight.

A.2.1 Alternative Measures of Racial and Ethnic Segregation

Social scientists have used a number of different methods for assessing the extent to which members of different social groups are segregated from each other. The discussion that follows will briefly describe the methods and present the results of three commonly employed alternative measures of racial and ethnic segregation between schools within a unit of interest, and compare these results with those obtained by the measure r_{ij}.

1. Dissimilarity Index

The first alternative measure examined is the dissimilarity index, or "index of replacement." The formula employed here is

$$D = \frac{1}{2} \sum_{i=1}^{k} \left| \frac{N_i}{N} - \frac{W_i}{W} \right|$$

where N_i is the number of black or Hispanic students in school i and N is the total number of blacks or Hispanics in the sector; and W_i is the number of whites in school i and W is the total number of whites in the sector (Cortese, Falk, and Cohen 1976). The usual interpretation of the dissimilarity index is that it represents the proportion of the minority population in the sector that would have to be shifted from the schools in which they are currently enrolled in order to achieve an even distribution of minorities across the schools of the sector. Carrying out the calculations for each of the three sectors and for the private sector as a whole, the measures of dissimilarity (D_{black} and $D_{Hispanic}$) are obtained:

	D_{Black}	Ex_b	$D_{Hispanic}$	Ex_H
1. Public sector	.681	.093	.482	.034
2. Private sector	.600	.028	.584	.036
a. Catholic	.569	.032	.511	.036
b. Other private	.692	.021	.726	.032

The results generally indicate a greater extent of segregation than the measures r_{ij} used in table 3.1.4. The relative ordering of the sectors with respect to segregation also changes. For the segregation of blacks and whites, the public sector is more segregated than the private (.681 vs .600) and this is consistent with the r_{ij} results. But whereas the value of r_{ij} is lowest for the other private sector, the value of dissimilarity index for this sector is the highest (.691). For the segregation of Hispanics and whites, the results also contrast somewhat with the values of r_{ij}. While the dissimilarity index also shows the public sector to be less segregated than the private (.482 vs .584), the Catholic sector is now seen as more segregated (.511) than the public. For both of the index of dissimilarity and r_{ij}, though, the substantially higher value of Hispanic-white segregation in the private sector overall is largely a reflection of the contribution of the other private sector, where segregation is quite high.

A number of criticisms have been directed at the index of dissimilarity. Cortese, Falk, and Cohen (1976) argue that the concept of replacement is not a very useful tool for either analytic or policy purposes, since it does not allow for the replacement of the individuals who would have to be moved to achieve evenness. A measure suggested by these authors as more meaningful is an index of exchange, which gives the proportion of blacks or Hispanics that must exchange laces with non-blacks or non-Hispanics to achieve evenness. These qualities are derived by simply multiplying the above calculated indices of dissimilarity by the proportion of the sector that is of the group in question (blacks or Hispanics in this case). The measures of exchange, Ex_b and Ex_H, are listed alongside the measures of dissimilarity in the above table. These measures correspond much more closely to the r_{ij} measures used in the body of the report, showing in the case of black-white segregation a greater public-private disparity than shown by r_{ij}.

While the dissimilarity index and its derivatives have a certain attractiveness in respect to the relative ease of their calculation and interpretation, it is questionable whether these sorts of measures are applicable to either the sort of question we are posing here (i.e. the extent of within-sector segregation) or the data we have available. To be sure, we are asking about how students of different groups are distributed among schools within the different sectors, and the dissimilarity index represents an aggregation of differences between distributions at the school level and the sector distribution. It is the case, however, that many schools within the public and private sectors are not located in areas where minorities reside in substantial numbers, if at all. Thus the estimates for the proportions that must be replaced or exchanged to achieve a balance are of questionable value. Dissimilarity measures are probably most useful for local level comparisons, which is in fact the way they are most commonly used. We have made an effort to obtain a locally-based measure of segregation, the results of which are found in table 3.5.1. The figures reported in the table are obtained by comparing the proportional minority enrollment of schools to the proportion of minority school-age residents in the local areas that the schools are located in.

Aside from the substantive problems with the dissimilarity index, the data at our disposal are not well suited technically to such calculations. For as Cortese et al (1976) demonstrate, the values of a dissimilarity index will depend (inversely) on both the number of minority students within schools and the overall proportion minority in the sector. In effect, then, the index combines between and within components of segregation (See Schwartz and Winship 1979 for a discussion of the general problem). As there are sharp differences between the public and private sectors on both of these counts, it

seems that little confidence should be placed in results of dissimilarity analyses with data such as those we employ.

2. Gini Index

A second measure that can be used for assessing the extent of within-sector segregation is the Gini index. As Duncan and Duncan (1955) point out, the Gini index can be readily illustrated in relation to the "segregation curve." This curve is given by plotting the cumulative proportion of whites on the cumulative proportion of blacks or Hispanics across all schools in a sector, where the schools are first arrayed in descending order of the proportion of their students who are black or Hispanic. The computational formula for the Gini index is

$$G_i = \sum_{i=1}^{k} x_{i-1} - y_i - \sum_{i=1}^{k} x_i y_{i-1}$$

where x_i is the cumulative proportion of blacks or Hispanics through the ith school and y_i is the cumulative proportion of whites through the ith school, with the schools ranked in descending order of the proportion of their students who are black or Hispanic. The Gini index is equal to the area between the curve and the main diagonal. Segregation curves for blacks and Hispanics in each sector are given in figures A-1 to A-8.

	Gi_{Black}	$Gi_{Hispanic}$
Public	.865	.694
Private	.800	.787
Catholic	.775	.704
Other Private	.838	.911

Figure A-1

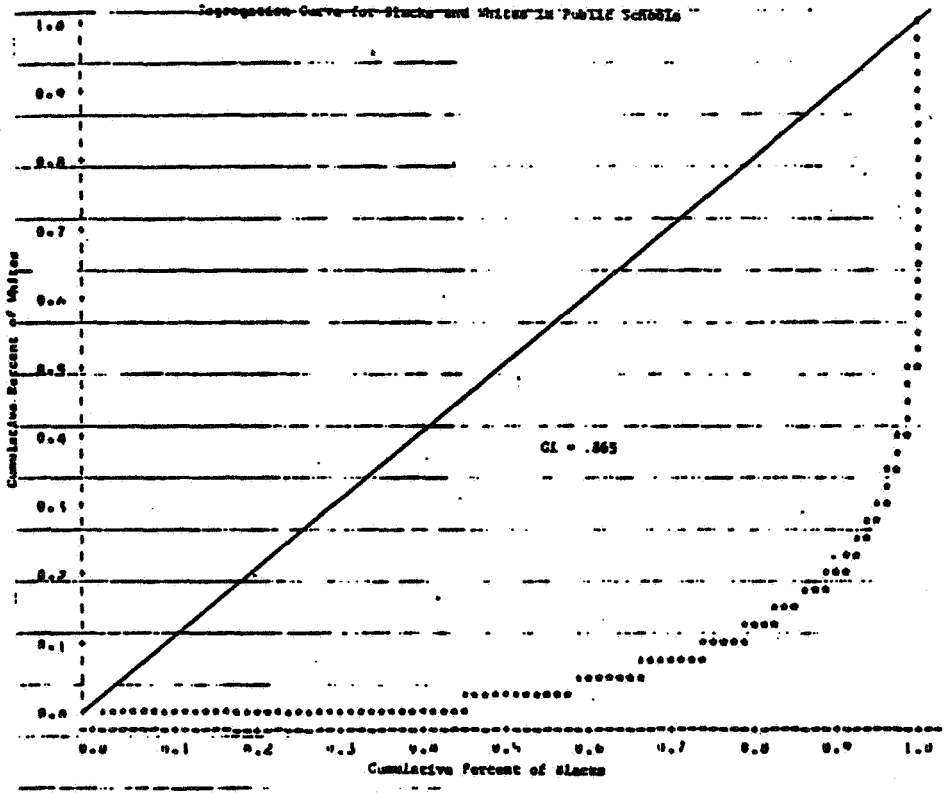

Figure A-2

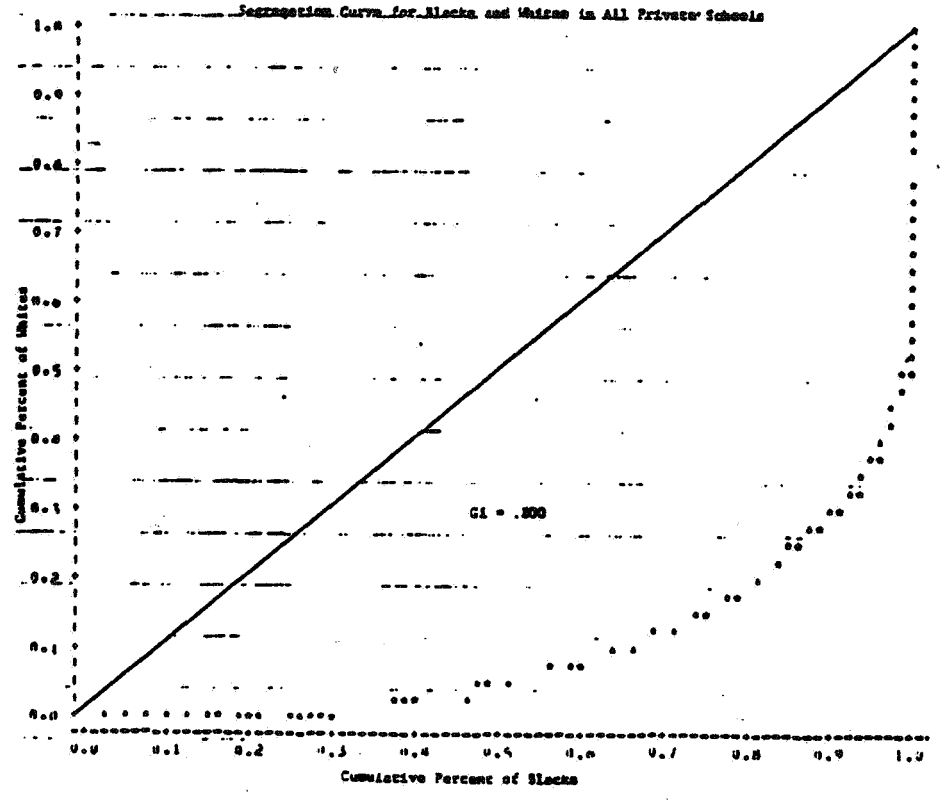

Figure A-3

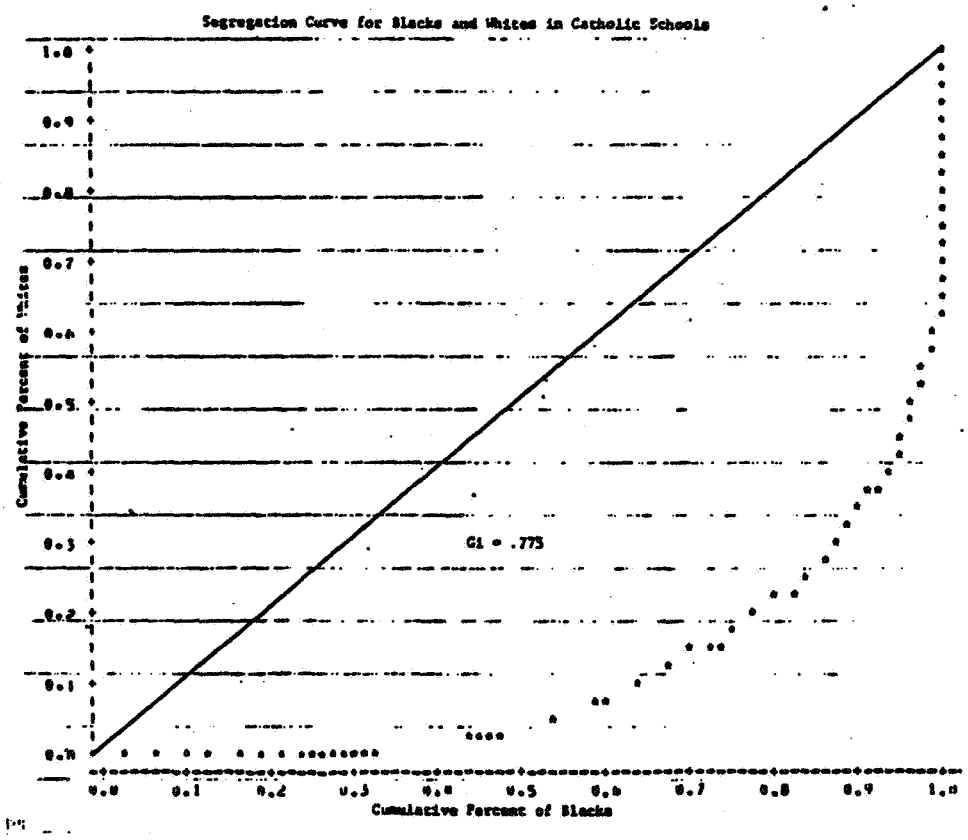

Figure A-4

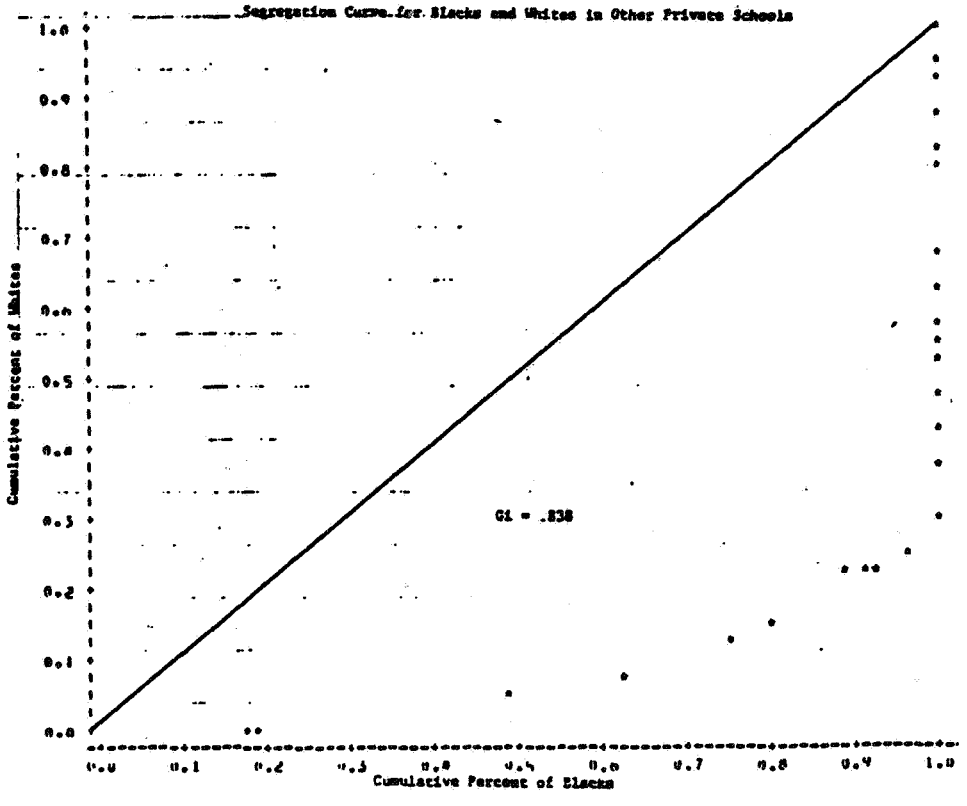

Figure A-5

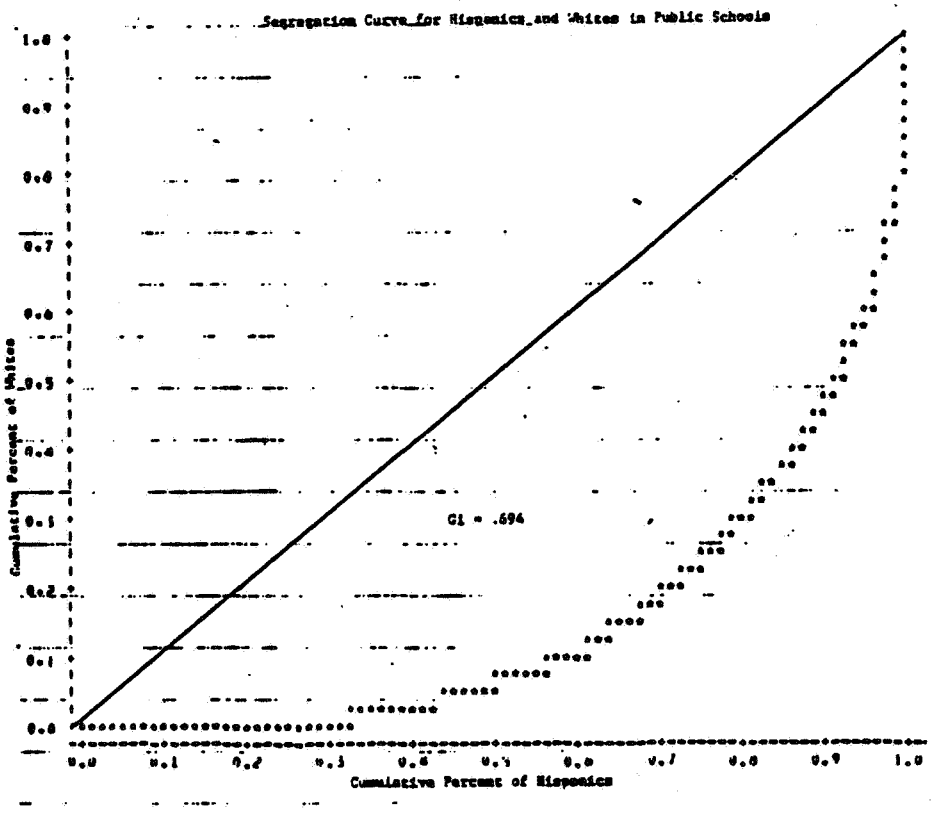

Figure A-6

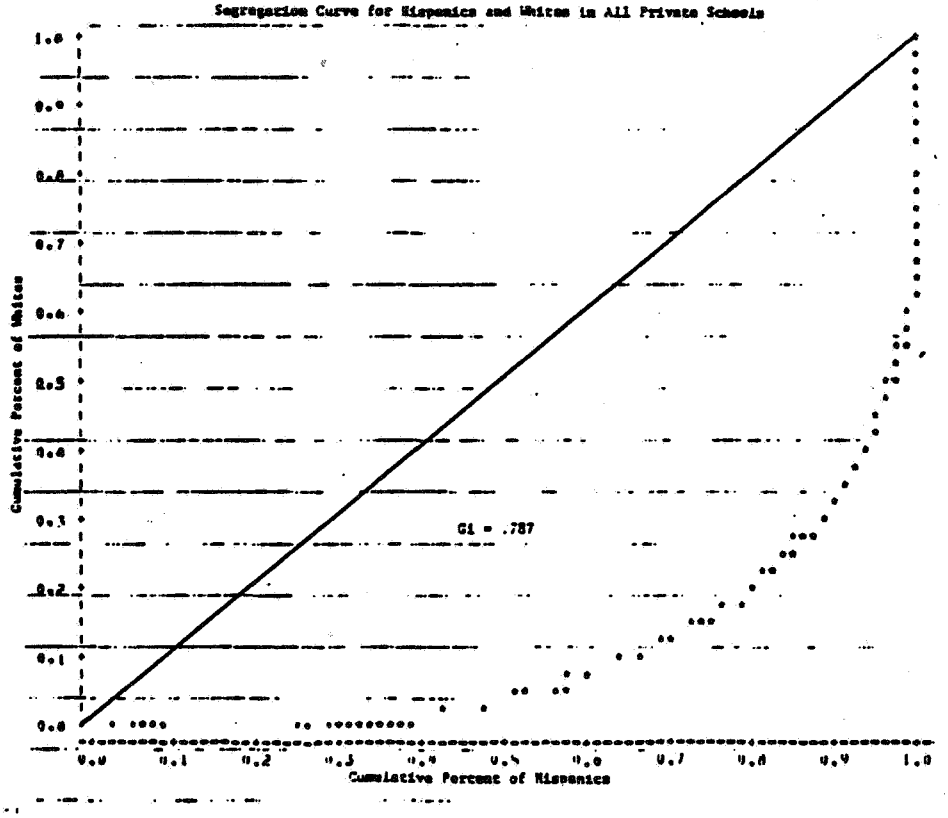

Figure A-7

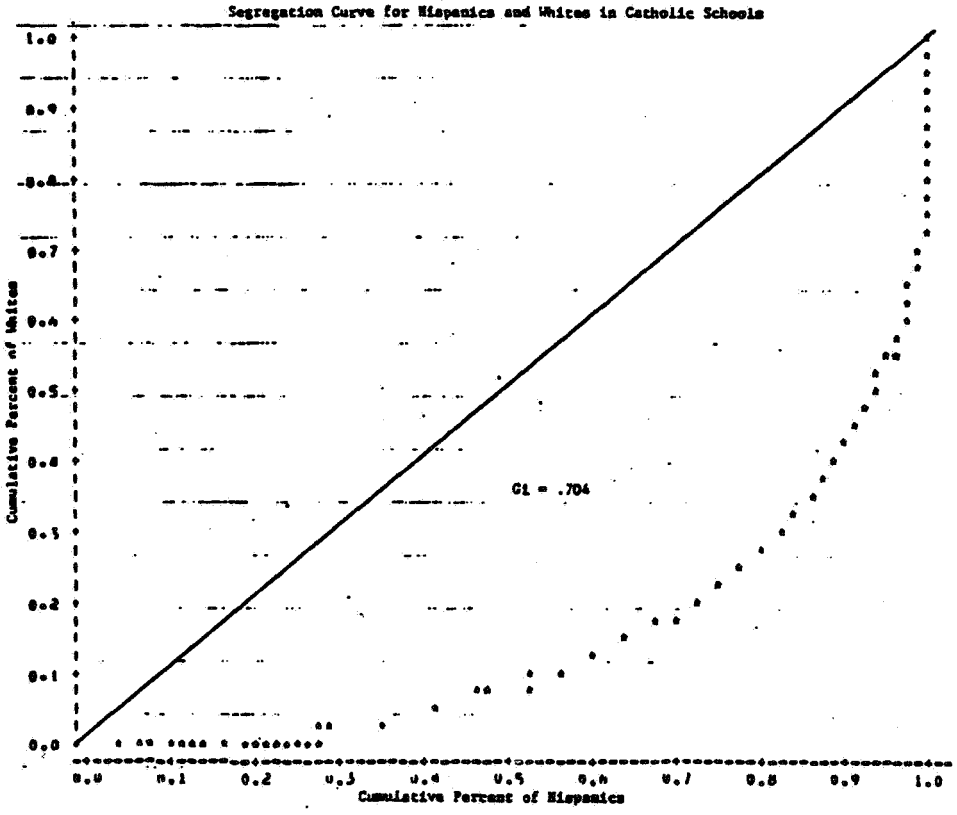

Figure A-8

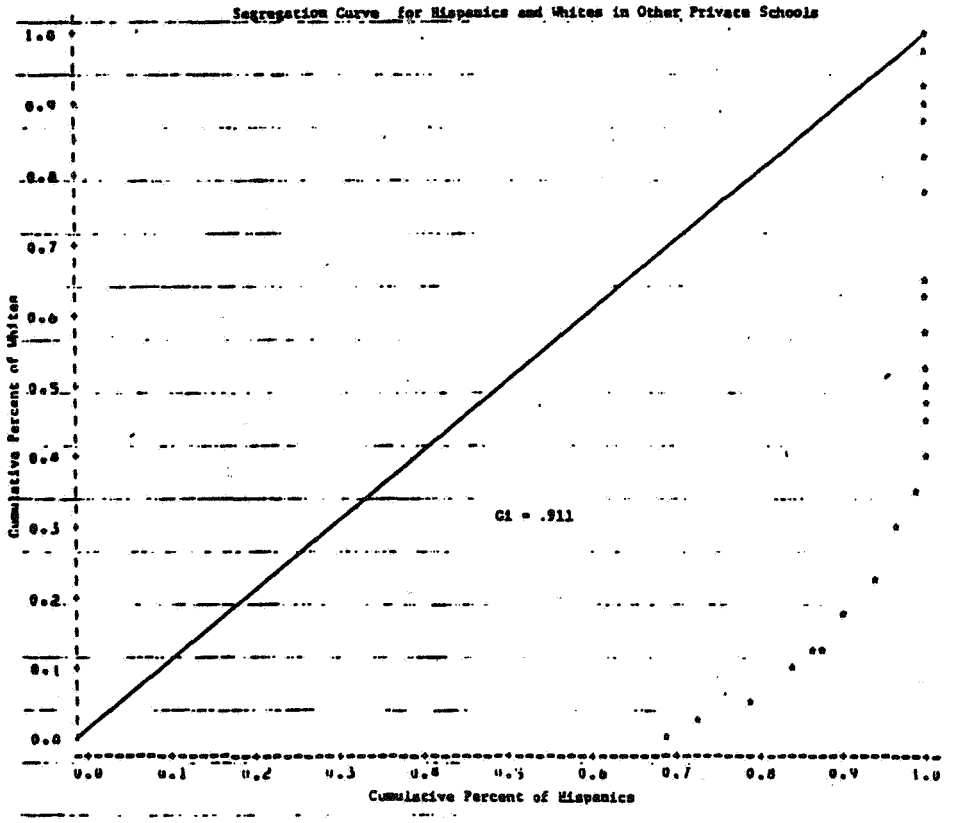

TABLE A.2.1

Racial and ethnic entropies and indices of segregation for public and private schools

Measure	Total U.S.	Public	Private		
			Total	Catholic	Other Private
A. Sector Entropies					
1. E_{bw}, the racial entropy of the sector	.678	.702	.398	.441	.306
2. E_{hw}, the ethnic entropy of the sector	.570	.583	.437	.479	.348
B. Average School Entropies					
1. $\bar{E}_{bw}$, the average racial entropy	.376	.389	.261	.298	.190
2. $\bar{E}_{hw}$, the average ethnic entropy	.368	.377	.289	.344	.185
C. Segregation Indices					
1. H_{bw}, segregation of blacks and whites (ranges from 1=complete segregation to 0=no segregation)	.445	.446	.345	.324	.378
2. H_{hw}, segregation of Hispanics and whites (ranges from 1=complete segregation to 0=no segregation)	.354	.353	.337	.281	.468

[a]The entropies and segregation measures are calculated by the following formulas:

$$E_{ij} = p_i \log 2\frac{1}{p_i} + p_j \log 2\frac{1}{p_j}$$

where p_i = the proportion of a sector's student membership that is of group i, and p_j = the proportion of that sector's membership which is group j.

$$\bar{E}_{ij} = \sum (N_i + N_j) p_i \log 2\frac{1}{p_i} + p_j \log 2\frac{1}{p_j} \Big/ \sum (N_i + N_j)$$

where N_i = the number of group i students in school x, N_j = the number of group j students in school x, p_i = the proportion of group i students in schools x, and p_j = the proportion of group j students in school x's membership.

$$H_{ij} = (E_{ij} - \bar{E}_{ij})/E_{ij}$$

See Theil and Finizza (1967 and 1970), and Zoloth (1976) for discussion of the method and additional applications.

The ordering of sectors with respect to the segregation of blacks and whites is essentially the same as that found in table 3.1.2, where the public sector is more segregated internally than the private sector as a whole, and the Catholic and other private sectors taken separately. The results for ethnic segregation, however, diverge somewhat from what is obtained in table 3.1.2. By the Gini index, the Catholic sector is slightly more segregated internally than is the public sector, whereas the measure r_{ij} indicates a reverse ordering. By both measures the other private sector overall is found to be the most segregated.

3. Information Theoretic Index

The third alternative measure of segregation that we employed is one derived from the information theoretic framework by Theil. This measure overcomes the limitations of dissimilarity indices and has attractive mathematical properties (see Zoloth 1976 and Fienberg 1981). The computational formulas and results are shown in table A.2.1. Theil and Finizza (1967) consider the entropy measures to be indices of "integration"; from these a measure of segregation can be calculated. The closer that the racial or ethnic composition of a given unit, such as a sector or a school, approaches an even balance, the closer the entropy of the unit is to its upper limit of 1. The lower limit is 0, corresponding to the situation where only one group is represented in the unit. The general strategy is calculation of the entropy for a sector as a whole, then calculation of the average entropy for the schools in that sector and finally, as a measure of segregation, the former minus the latter divided by the latter. The general interpretation of the segregation measure is the degree to which the schools in this sector have less even distributions of whites and blacks than the sector as a whole.

tor entropies given at the top of table, E_{bw} (for blacks and (for Hispanics and whites) reflect the patterns of between on. As a result of higher proportion of blacks enrolled in public schools, the racial entropy of the public sector (.702) is substantially larger than both that of the Catholic sector (.441) and that of the other private sector (.306). Examining the ethnic entropies of the sectors, E_{hw}, the more even balance between sectors in the proportions of Hispanics enrolled is expressed in less pronounced public-private differences.

The differences between sectors are smaller when the weighted averages of school entropies, $\overline{E}_{ij}$, are compared. The average school entropies for the private sector tend to be closer to the private sector entropies than the average public school entropy is to the public sector entropy. This expresses in a different measure the same phenomenon shown in table 3.1.2 when the measures of contact s_{ij} are compared to the proportions enrolled in the sector to obtain r_{ij}. As a consequence, the information theoretic measures of segregation, H_{ij}, lead to essentially the same conclusions as the measures r_{ij} in table 3.1.2. Overall, it appears that the contribution of the private sector to the total segregation of Hispanics and blacks from white in American secondary education is negligible or in the direction of decreasing that segregation slightly. Evidence for the latter tendency is seen in the segregation of blacks and whites. The private sector as a whole is substantially less segregated internally than the public sector (.345 vs .446). Comparing the total U.S. segregation of blacks and whites (.445) to the public sector value, we again reach the conclusion that if private school students were redistributed back into the public sector in exactly the same way that public school students are presently distributed, the segregation in American secondary education would increase slightly. With respect to the

segregation of Hispanics and whites, the tendency goes in the opposite direction. Here the private sector appears to slightly increase the overall segregation that is found.

To summarize the results of the analysis of within-sector segregation, all of the alternative measures examined here corroborate the conclusion that blacks and whites are more segregated in the public than in the private sector. Within the private sector, each of the measures except the r_{ij} show the Catholic sector to be less racially segregated than the other private, and all but the dissimilarity index show the other private sector to be more segregated than the public sector. With respect to the segregation of Hispanics and whites, all four of the indices examined show the priate sector to be more segregated than the public sector. Within the private sector the results are more variable between the different indices: While all indications are that the Catholic schools have less ethnic segregation than the other private schools, and that the other private schools are more segregated than the public sector, the Catholic sector has less segregation than the public by the information theoretic and r_{ij} measures, but not by the dissimilarity index and the Gini coefficient.

The information-theoretic index and the r_{ij} index (which also has been called a variance-based index) are quite similar in the results they give with these data, while the dissimilarity index and the Gini coefficient are similar to one another. Apart from specific technical differences, a major reason for this is that the r_{ij} index and the information-theory index express separately between-sector and within-sector segregation by controlling on the proportion black (or white) in the sector when measuring the within district segregation. For the dissimilarity index and the Gini coefficient, this overall proportion is not controlled, so that these measures incorporate into the measure the unevenness of the overall sector racial distribution.

A.3 Calculation of Measures of the Distribution of Students Relative to the Racial or Ethnic Composition of the Local Area

This section describes the measures employed to compare the racial compositions of schools with those of local areas. Interest in such comparisons derives from concern over the accessibility of private education for students of different minority groups. To follow the line of presentation developed with the measures s_{ij} and r_{ij}, we will conceptualize the problems here in terms of an "average student."

The first measure can be seen as addressing a question about the geographic accessibility of "places" in private education for students of different groups. If the average student within a given sector attends a school that is located in an area that has a lower proportion of, say, blacks, than the average student within another sector, then the conclusion would be that the education provided by schools in the former sector tends to be less geographically accessible to blacks than the education provided by schools in the latter sector. Thus, if the schools in a sector are numbered 1, ...k, ...n, and the first school is considered, this school is located in an area that has some proportion of its population that is black. Call this proportion p_{1b}. There are a certain number of students in this school, n_1, and, for this number of students, the proportion of blacks in the local area of their school is p_{1b}. If this student-weighted proportion is averaged over all schools,

we obtain the measure, which will be called U_b, the proportion of blacks in the local area of the school attended by the average student:

$$U_b = \frac{\sum_k n_k p_{kb}}{\sum_k n_k} \qquad (1)$$

or for any population group i:

$$U_i = \frac{\sum_k n_k p_{ki}}{\sum_k n_k} \qquad (2)$$

The proportion obtained for each sector can be compared to those of the other sectors in a straightforward fashion.

A second measure follows directly from the first. If geographic accessibility is taken as given, the question arises, How do the actual enrollments in the different sectors compare to the compositions of the areas where their constituent schools are located? If the schools within a given sector enroll numbers of whites, blacks, and Hispanics that are proportional to the numbers of whites, blacks, and Hispanics living in the areas where the schools are located, then schools of this sector reflect exactly the racial-ethnic composition of the areas where they are located. If, however, the average student in a given sector attends a school that has a lower proportion of, say, blacks or Hispanics, then this means that blacks or Hispanics are not attending schools of this sector despite geographic accessibility. Thus, while the first measure is designed to describe the geographic accessibility of schools in a particular sector to a particular group, the second is designed to describe the degree to which enrollment of that group matches the proportion in the geographic area.

The measure to be constructed is a measure of the difference in proportion of a given group in the school and in the surrounding area, weighted by school enrollment. The measure is constructed as follows:

$$V_i = \frac{\sum_k n_k (p_{ki} - q_{ki})}{\sum_k n_k} \qquad (3)$$

where n_k is the number of students in school k, p_{ki} is the proportion of the population of the area where school k is located that is of group i, and q_{ki} is the proportion of school k's enrollment that is of group i. Since the sum of the weighted proportions q_{ki} is simply equal to the overall proportion of group i in the sector (see tables 3.1.1 and 3.1.2), equation (3) reduces to

$$V_i = \frac{\sum_k n_k p_{ki}}{\sum_k n_k} - q_i = U_i - q_i \qquad (4)$$

where q_i is the proportion of the sector's total enrollment that is of group i. The measure V_i for sector X can be expressed by the statement, "The average student in sector X attends a school with a proportion of students in group i that is smaller by V_i than the proportion of youth that are of group i in the area in which the school is located."

Although it was not used in this report, one can estimate the extent to which the student weighted schools in a given sector vary in terms of differences from this overall sector measure, with a deviation score, D_i, analogous to a variance. It is calculated as follows:

$$D_i = \frac{\sum_k (n_k \sqrt{(p_{ki} - q_{ki} - V_i)^2}}{\sum_k n_k} \qquad (5)$$

A.4 Regression coefficients, standard errors, and explained variance for major analyses of report

For the text tables listed below, appendix reference tables with regression coefficients, standard errors, and explained variance are included in this section. Means and standard deviations for all variables used in chapters 6 and 7, along with the correlation matrices for the major portion of the analyses, are included in appendix section A.5.

Text	Appendix reference
Table 6.2.1	Tables A.4.1, A.4.2 and A.4.3
Table 6.2.2	Tables A.4.3 and A.4.4
Table 6.2.6	Table A.4.5
Table 6.3.1	Table A.4.8
Table 6.3.4	Table A.4.11
Tables 7.2.2 and 7.2.5	Tables A.4.13 and A.4.14

For most of the remaining tables presented in chapters 6 and 7, the correlation matrices in appendix section A.5 may be used to reproduce the results reported.

TABLE A.4.1

SUBTEST REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2)
FOR MODEL INCLUDING PUBLIC SCHOOL SOPHOMORES

	Reading (8)*		Vocabulary (8)*		Mathematics (18)*	
	b	s.e.	b	s.e.	b	s.e.
Intercept	2.083	.071	2.129	.065	5.628	.136
BB101	-.005	.008	.036	.007	.091	.015
BB042	.060	.007	.072	.006	.090	.013
BB039	.076	.006	.097	.005	.186	.011
Number siblings	-.049	.006	-.062	.005	-.075	.011
BB103	.037	.007	.026	.006	.122	.013
Two parent household	.051	.031	.021	.028	.238	.059
BB037B	.005	.017	-.046	.015	.015	.032
BB037C	-.105	.016	-.042	.015	-.227	.032
BB104C	.082	.010	.070	.010	.063	.021
BB104C	.248	.036	.113	.033	.264	.069
BB104D	-.006	.029	.056	.027	.257	.056
BB104G	.255	.035	.296	.032	.378	.067
BB104I	.332	.031	.291	.029	.690	.060
Father's expectation	.180	.034	.135	.031	.484	.065
Mother's expectation	.483	.034	.386	.031	1.183	.065
Hispanic	-.704	.046	-.544	.042	-1.624	.088
Black	-.912	.037	-.852	.034	-2.226	.071
R^2	.190		.214		.255	

TABLE A.4.2

SUBTEST REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2)
FOR MODEL INCLUDING PRIVATE SCHOOL SOPHOMORES

	Reading (8)*		Vocabulary (8)*		Mathematics (18)*	
	b	s.e.	b	s.e.	b	s.e.
Intercept	2.612	.217	2.829	.203	7.830	.408
BB101	-.057	.021	.053	.020	.060	.040
BB042	.104	.015	.060	.014	.073	.029
BB039	.050	.014	.107	.013	.140	.027
Number siblings	-.084	.018	-.098	.017	-.120	.034
BB103	.032	.019	-.002	.018	.114	.036
Two parent household	.243	.093	-.091	.087	-.264	.176
BB037B	.012	.045	.023	.042	.069	.085
BB037C	-.210	.045	-.186	.042	-.591	.086
BB047G	.084	.028	.010	.026	.013	.053
BB104C	-.166	.114	-.104	.106	-.564	.214
BB104D	.170	.093	.358	.086	.459	.174
BB104G	.396	.116	.572	.109	.962	.219
BB104I	.446	.094	.253	.088	.516	.177
Father's expectation	.083	.101	.102	.094	.334	.190
Mother's expectation	.512	.105	.398	.098	1.330	.196
Hispanic	-.326	.139	-.322	.121	-1.007	.244
Black	-.096	.157	-.621	.147	-1.177	.296
Other Private Sector	-.172	.068	-.023	.064	-.018	.128
High Performance schools	.979	.612	1.151	.572	2.504	1.151
R^2	.120		.166		.153	

*Numbers in parenthesis refer to total number of test items

TABLE A.4.3

SUBTEST REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR MODEL INCLUDING PUBLIC SCHOOL SENIORS

	Reading (8)*		Vocabulary (8)		Mathematics (18)*	
	b	s.e.	b	s.e.	b	s.e.
Intercept	2.994	.079	2.881	.072	6.780	.152
BB101	-.008	.009	.034	.008	.068	.017
BB042	.055	.007	.078	.006	.123	.014
BB039	.065	.006	.080	.006	.177	.012
Number siblings	-.043	.007	-.062	.006	-.031	.013
BB103	.021	.008	.014	.007	-.056	.015
Two parent household	.066	.034	-.068	.031	.113	.066
BB037B	-.020	.019	.002	.017	-.022	.036
BB037C	-.118	.019	-.124	.017	-.269	.037
BB047G	.086	.012	.068	.011	.038	.023
BB104C	.056	.041	.065	.037	-.020	.079
BB104D	.045	.034	.157	.030	.319	.064
BB104G	.371	.039	.322	.035	.473	.075
BB104I	.369	.036	.338	.033	.993	.070
Father's expectation	.301	.038	.288	.035	.859	.073
Mother's expectation	.541	.037	.478	.034	1.372	.072
Hispanic	-1.072	.055	-.796	.050	-1.961	.105
Black	-1.088	.043	-1.052	.040	-2.416	.084
R^2	.196		.236		.264	

*Numbers in parenthesis refer to total number of items in subtest

TABLE A.4.4

SUBTEST REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2)

FOR MODEL INCLUDING PRIVATE SCHOOL SENIORS

	Reading (8)*		Vocabulary (8)*		Mathematics (18)*	
	b	s.e.	b	s.e.	b	s.e.
Intercept	3.462	.227	3.483	.200	8.610	.424
BB101	-.095	.025	-.054	.022	.024	.046
BB042	.039	.017	.081	.014	.103	.032
BB039	.087	.015	.076	.014	.207	.029
Number siblings	-.035	.018	-.079	.016	-.045	.034
BB103	.019	.021	.037	.018	-.052	.039
Two parent household	.107	.101	.179	.089	-.341	.188
BB037B	-.114	.050	-.103	.044	-.444	.093
BB037C	.013	.053	-.022	.046	.102	.099
BB047G	.041	.031	.060	.027	-.006	.057
BB104C	-.060	.132	-.113	.116	-.423	.245
BB104D	.039	.106	.141	.094	.428	.198
BB104G	.357	.129	.485	.114	.874	.240
BB104I	.521	.113	.394	.100	.949	.211
Father's expectation	.274	.113	.127	.100	.334	.212
Mother's expectation	.539	.117	.532	.103	2.035	.218
Hispanic	-.352	.146	-.332	.129	-1.127	.273
Black	-.591	.160	-.615	.141	-1.687	.299
Other Private Sector	.166	.074	-.044	.065	.137	.138
High Performance schools	1.115	.649	1.082	.573	2.564	1.212
R^2	.109		.152		.199	

TABLE A.4.5

REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) USING FIVE BACKGROUND VARIABLES FOR SUBTEST

	Reading (8)*		Vocabulary (8)*		Mathematics (18)*	
	b	s.e.	b	s.e.	b	s.e.
Public Sophomores						
Intercept	2.650	.038	2.482	.034	6.923	.067
BB101	.061	.008	.092	.007	.252	.015
BB042	.094	.007	.102	.006	.165	.013
BB039	.121	.006	.137	.005	.289	.011
Hispanic	-.824	.045	-.659	.045	-1.849	.089
Black	-1.151	.036	-1.073	.034	-2.744	.067
R^2	.128		.162		.184	
Public Seniors						
Intercept	3.554	.042	3.244	.039	7.956	.083
BB101	.063	.008	.093	.008	.232	.016
BB042	.082	.007	.106	.006	.188	.014
BB039	.116	.006	.131	.005	.298	.012
Hispanic	-1.205	.052	-.926	.052	-2.185	.114
Black	-1.329	.041	-1.283	.041	-2.870	.083
R^2	.129		.169		.177	
Catholic Sophomores						
Intercept	3.802	.129	3.722	.121	10.048	.238
BB101	-.034	.024	.022	.023	.019	.044
BB042	.074	.017	.072	.016	.053	.032
BB039	.072	.016	.089	.015	.156	.030
Hispanic	-.506	.141	-.492	.132	-1.556	.258
Black	-.562	.160	-1.023	.150	-1.992	.293
R^2	.036		.065		.052	
Catholic Seniors						
Intercept	4.757	.136	4.747	.120	10.434	.261
BB101	-.042	.026	-.004	.023	.066	.051
BB042	.007	.019	.062	.017	.079	.037
BB039	.087	.019	.077	.015	.210	.033
Hispanic	-.430	.157	-.492	.137	-1.259	.301
Black	-.599	.173	-.816	.152	-1.675	.332
R^2	.021		.046		.055	
Other Private Sophomores						
Intercept	2.207	.300	1.745	.274	5.527	.592
BB101	.101	.052	.240	.047	.489	.103
BB042	.201	.042	.063	.038	.192	.083
BB039	.071	.039	.232	.035	.345	.076
Hispanic	-.536	.409	-.459	.374	-.262	.808
Black	1.055	.589	.515	.541	.375	1.161
R^2	.135		.239		.182	
Other Private Seniors						
Intercept	3.602	.318	3.380	.296	7.740	.607
BB101	.006	.059	.079	.055	.186	.114
BB042	.109	.047	.145	.043	.200	.090
BB039	.174	.044	.147	.041	.459	.086
Hispanic	-.456	.461	-.258	.429	-1.319	.891
Black	-.882	.471	-.522	.438	-2.039	.909
R^2	.142		.180		.238	

*Numbers in parentheses refer to number of items in test

TABLE A.4.6

FULL TEST REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR MODEL INCLUDING ALL SOPHOMORES

	Reading (19)*		Vocabulary (21)*		Mathematics (38)*	
	b	s.e.	b	s.e.	b	s.e.
Intercept	5.665	.123	6.933	.134	11.506	.235
BB101	.022	.011	.107	.011	.147	.022
BB042	.121	.011	.166	.011	.204	.022
BB039	.175	.011	.222	.011	.357	.022
Number of Siblings	-.113	.011	-.180	.011	-.136	.022
BB103	.065	.011	.067	.011	.232	.022
Two-parent household	.143	.056	.052	.056	.346	.101
BB037B	.010	.034	-.039	.034	.008	.056
BB037C	-.226	.034	-.216	.034	-.511	.056
BB047G	.158	.022	.147	.022	.125	.034
BB104C	.402	.067	.300	.067	.337	.123
BB104D	.053	.056	.211	.056	.499	.101
BB104G	.601	.056	.791	.067	.720	.112
BB104I	.736	.056	.815	.056	1.369	.101
Father's Expectations	.325	.056	.291	.067	.988	.112
Mother's Expectations	1.018	.056	1.083	.067	2.134	.112
Hispanic	-1.516	.078	-1.722	.067	-3.031	.145
Black	-1.847	.067	-2.615	.067	-4.099	.123
Catholic Sector	.540	.089	.921	.089	.882	.156
Other Private Sector	.063	.112	.435	.123	.752	.212
High performance school	2.690	1.352	3.190	1.463	5.780	2.513
R^2	.239		.302		.282	

*Numbers in parentheses refer to total number of test items.

TABLE A.4.7

FULL TEST REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR MODEL INCLUDING ALL SENIORS

	Reading (20)*		Vocabulary		Mathematics (32)*	
	b	s.e.	b	s.e.	b	s.e.
Intercept	7.386	.145	8.921	.186	13.342	.207
BB101	-.019	.021	.007	.021	.096	.021
BB042	.133	.010	.238	.021	.198	.021
BB039	.140	.010	.231	.010	.271	.021
Number siblings	-.095	.010	-.196	.010	-.038	.021
BB103	.034	.010	.039	.021	.075	.021
Two parent household	.074	.062	-.072	.083	.077	.093
BB037B	-.036	.031	-.071	.041	-.140	.052
BB037C	-.226	.031	-.317	.041	-.347	.052
BB047G	.160	.021	.172	.031	.042	.031
BB104C	.207	.072	.034	.093	-.051	.114
BB104D	.065	.062	.344	.083	.481	.093
BB104G	.921	.072	.989	.093	.625	.104
BB104I	.865	.072	.908	.083	1.582	.093
Father's expectation	.708	.072	.681	.093	1.248	.104
Mother's expectation	1.181	.072	1.329	.083	2.196	.104
Hispanic	-2.253	.083	-2.176	.103	-2.851	.115
Black	-2.307	.103	-2.689	.124	-3.413	.114
Catholic sector	.320	.093	1.146	.124	.640	.135
Other Private sector	.776	.134	.991	.165	.961	.186
High performance schools	2.687	1.437	5.106	1.831	4.752	2.081
R^2	.239		.240		.280	

*Numbers in parentheses refer to total number of test items

TABLE A.4.8
REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR MODEL OF EDUCATIONAL EXPECTATIONS

	Sophomores				Seniors			
	Public		Private		Public		Private	
	b	s.e	b	s.e	b	s.e.	b	s.e.
Intercept	.810	.032	1.205	.092	.977	.032	1.366	.088
BB101	.028	.003	.029	.010	.014	.003	.010	.010
BB042	.055	.002	.042	.007	.050	.003	.052	.006
BB039	.067	.003	.065	.006	.065	.002	.055	.006
Number siblings	-.023	.003	-.046	.008	-.018	.003	-.019	.007
BB103	.015	.003	.005	.009	.012	.003	.013	.008
Two parent household	-.036	.014	-.038	.040	-.071	.014	-.245	.039
BB037B	.002	.008	.028	.019	0	.007	-.024	.019
BB037C	-.015	.007	-.027	.019	-.009	.007	.030	.021
BB047G	.061	.005	.062	.012	.053	.004	.038	.012
BB104C	.012	.016	-.043	.049	-.039	.016	-.048	.051
BB104D	.050	.013	.067	.039	.049	.014	.065	.042
BB104G	.093	.016	.097	.049	.080	.016	.115	.050
BB104I	.059	.014	.145	.040	.122	.015	.130	.044
Father's expectation	.317	.015	.332	.043	.407	.015	.350	.045
Mother's expectation	.577	.015	.510	.045	.588	.015	.569	.046
Hispanic	.059	.021	.067	.055	.046	.022	.331	.056
Black	.231	.016	.391	.068	.312	.017	.311	.062
Other Private Sector	DNA	DNA	-.142	.030	DNA	DNA	-.006	.029
High Performance schools	DNA	DNA	.184	.260	DNA	DNA	.298	.239
R^2	.364		.309		.391		.331	

TABLE A.4.9

\NALYSIS FOR TABLE 6.3.2: PERCENT OF SENIORS AND SOPHOMORES IN PUBLIC AND PRIVATE SCHOOLS INDICATING EXPECTATIONS TO ATTEND COLLEGE AT EARLIER GRADES: ACTUAL PERCENT[a] AND STANDARDIZED PERCENT[b]: SPRING 1980

(Unweighted and listwise deletion)

At Earlier Grade	Public	Catholic	Other Private
Seniors			
a) Actual percent			
At 8th grade	.51	.70	.69
At 9th grade	.55	.75	.72
At 10th grade	.60	.79	.80
At 11th grade	.66	.84	.80
b) Standardized percent			
At 8th grade	.49	.60	.57
At 9th grade	.54	.66	.61
At 10th grade.....	.61	.71	.72
At 11th grade.....	.70	.80	.75
Sophomores			
c) Actual percent			
At 6th grade	.45	.59	.62
At 7th grade	.49	.66	.65
At 8th grade	.56	.77	.74
At 9th grade	.64	.82	.78
d) Standardized percent			
At 6th grade.....	.45	.49	.50
At 7th grade.....	.49	.56	.53
At 8th grade.....	.56	.70	.64
At 9th grade.....	.64	.76	.72

[a]Actual percent differs from those given in section 6.3 due to the listwise deletion required by the logit program.

[b]Backgrounds are standardized to public school sophomores.

TABLE A.4.10

DIFFERENCES IN LOGITS[a] FOR COLLEGE EXPECTATIONS, STANDARDIZED TO PUBLIC SCHOOL SOPHOMORES, BETWEEN EACH TYPE OF PRIVATE SCHOOL AND THE PUBLIC SCHOOLS: SPRING 1980

(Based on logit analysis Table A.4.10)

At Earlier Grade	Catholic	Other Private
a) Seniors:		
At 8th grade	.54	.36
At 9th grade	.77	.39
At 10th grade	.88	1.01
At 11th grade	1.67	.67
b) Sophomores:		
At 6th grade	.14	.18
At 7th grade	.31	.17
At 8th grade	1.06	.51
At 9th grade	1.39	.79
c) Sophomores and Seniors:		
At 6th grade (sophomores)	.14	.18
At 7th grade (sophomores)	.31	.17
At 8th grade (both)	.80	.76
At 9th grade (both)	1.08	.73
At 10th grade (seniors)	.88	1.01
At 11th grade (seniors)	1.67	.67

[a]See text on page 226 for method of calculating logits.

TABLE A.4.11

REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR FIVE BACKGROUND VARIABLE MODEL OF EDUCATIONAL EXPECTATIONS

	Sophomores						Seniors					
	Public		Catholic		Other Private		Public		Catholic		Other Private	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Intercept	1.083	.018	1.809	.060	1.270	.129	1.287	.019	1.945	.060	1.545	.128
BB101	.071	.003	.053	.012	.101	.022	.055	.042	.042	.011	.041	.023
BB042	.088	.003	.052	.008	.075	.018	.080	.003	.055	.009	.080	.019
BB039	.110	.002	.086	.007	.084	.017	.111	.003	.071	.008	.113	.018
Hispanic	.079	.023	.089	.066	-.045	.175	.041	.025	.341	.068	.435	.184
Black	.205	.017	.352	.075	.743	.251	.302	.019	.446	.075	.148	.188
R^2	.204		.138		.226		.195		.124		.278	

TABLE A.4.12

PROBIT ANALYSIS PREDICTING ENTRY INTO PRIVATE SECTOR: COEFFICIENTS FROM TWO MODELS

Variable	Model A	Model B
Intercept	-2.791*	-2.858
1. Income	.086*	.083*
2. Region (Northeast versus others)	.195*	.192
3. Catholic religious background	.868*	.866*
4. Mother's education	.089*	.075*
5. Number of siblings	-.031*	-.027*
6. Number rooms in home	.019*	.017*
7. Eighth grade college plans	DNA	.263*
8. Mother worked while child in elementary school ...	-.037	DNA
9. Mother worked before child in elementary school ...	.006	DNA
10. Talk with parents	-.019	-.025
11. BB104C	-.035	-.039
12. BB104D	.192*	.189
13. BB104G	.158*	.146*
14. BB104I	-.003	.017
15. Two parent family	-.110*	-.097*
16. Mother's school expectations	.369*	.268*
17. Hispanic	.196*	.179*
18. Black	.360*	.324*

*Significant at .05 level for two tail test.

TABLE A.4.13

REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR MODELS OF PUBLIC SOPHOMORE ACHIEVEMENT WHICH INCLUDE SCHOOL CHARACTERISTICS

Independent variables[a]	Reading (8)		Vocabulary (8)		Mathematics (18)	
	b	s.e.	b	s.e.	b	s.e.
Intercept	.703	.211	.912	.196	2.447	.395
BB101	-.007	.008	.032	.007	.083	.015
BB042	.044	.007	.056	.006	.055	.013
BB039	.062	.006	.082	.006	.143	.011
Number siblings	-.046	.006	-.060	.006	-.068	.011
BB103	.026	.007	.021	.006	.094	.013
Two parent household	.019	.031	.001	.029	.133	.057
BB037B	.012	.016	-.041	.015	.045	.031
BB037C	-.099	.016	-.036	.015	-.214	.030
BB047G	.047	.010	.039	.009	-.018	.019
BB104C	.238	.035	.109	.033	.249	.066
BB104D	-.036	.029	.024	.027	.154	.054
BB104G	.225	.034	.264	.032	.323	.064
BB104I	.306	.031	.268	.029	.605	.057
Father's expectation	.113	.033	.071	.031	.288	.063
Mother's expectation	.404	.033	.315	.031	.946	.062
Hispanic	-.653	.045	-.524	.042	-1.475	.084
Black	-.876	.038	-.816	.035	-2.087	.071
BB011C	.686	.029	.686	.026	DNA	DNA
BB011D	DNA	DNA	DNA	DNA	2.073	.052
Homework[b]	.047	.003	.034	.003	.114	.007
BB016	-.060	.009	-.051	.008	-.243	.017
BB059E	-.069	.027	-.056	.025	-.245	.051
MBB053E	.246	.075	.100	.070	.743	.140
MBB053F	-.109	.063	-.199	.058	-.590	.119
MBB053G	-.349	.076	-.014	.071	-.685	.142
MYB019A	.405	.074	.219	.068	.642	.139
MYB019B	-.077	.054	-.230	.050	-.422	.100
MYB019E	.113	.060	.187	.056	.341	.114
MYB019F	.469	.080	.483	.074	1.452	.149
R^2	.226		.248		.333	

[a] The variables prefixed with the letter M are school level means for the individual level variable. The codings for the latter are found in Appendix B.

[b] Recoded as actual hours. See appendix B for specific coding structure.

TABLE A.4.14

REGRESSION COEFFICIENTS, STANDARD ERRORS, AND EXPLAINED VARIANCE (R^2) FOR MODELS OF PUBLIC SENIOR ACHIEVEMENT WHICH INCLUDE SCHOOL CHARACTERISTICS

Independent variables[a]	Reading (8)		Vocabulary (8)		Mathematics (18)	
	b	s.e.	b	s.e.	b	s.e.
Intercept	1.806	.243	2.099	.222	3.361	.387
BB101	-.006	.008	.028	.007	.024	.014
BB042	.041	.007	.064	.006	.028	.012
BB039	.050	.006	.063	.005	.040	.011
Number siblings	-.043	.006	-.062	.006	.015	.011
BB103	.014	.007	.010	.007	.021	.014
Two parent household	.055	.034	-.061	.031	.069	.054
BB037B	-.021	.018	0	.017	.004	.028
BB037C	-.109	.019	-.113	.017	-.141	.030
BB047G	.045	.012	.035	.011	-.023	.018
BB104C	.065	.040	.078	.037	-.056	.063
BB104D	.012	.033	.122	.030	.069	.052
BB104G	.337	.038	.286	.035	.339	.060
BB104I	.319	.036	.297	.033	.437	.057
Father's expectation	.222	.037	.217	.034	.100	.059
Mother's expectation	.427	.037	.373	.034	.312	.059
Hispanic	-1.054	.054	-.802	.049	-1.495	.085
Black	-1.095	.044	-1.066	.040	-2.062	.071
BB011C	.710	.031	.717	.027	DNA	DNA
BB011D	DNA	DNA	DNA	DNA	.895	.054
Advanced math course[b]	DNA	DNA	DNA	DNA	1.495	.017
Homework[c]	.057	.004	.040	.004	.027	.006
BB016	-.035	.011	-.025	.010	-.049	.016
BB059E	-.032	.027	.028	.025	-.082	.044
MBB053E	.336	.083	.240	.076	.064	.133
MBB053F	-.126	.073	-.101	.066	.192	.115
MBB053G	-.256	.082	-.187	.076	-.674	.132
MYB019A	.304	.081	.238	.074	.375	.128
MYB019B	-.067	.059	-.332	.054	-.415	.094
MYB019E	-.028	.066	.191	.060	.382	.105
MYB019F	.378	.094	.256	.085	1.209	.150
R^2	.231		.271		.524	

[a] The variables prefixed with the letter M are school level means for the individual level variables. The codings for the latter are found in Appendix B.

[b] Number of advanced mathematics courses taken, EB005 in Appendix B.

[c] Recoded as actual hours. See appendix B for specific coding structure.

TABLE A.4.15

ACHIEVEMENT DIFFERENCES BETWEEN PRIVATE AND PUBLIC SCHOOLS DUE TO VARIOUS AREAS OF SCHOOL FUNCTIONING FOR PRIVATE SCHOOLS THAT FUNCTION AS PUBLIC SCHOOLS DO FOR THE AVERAGE PUBLIC SCHOOL SOPHOMORE

	Catholic			Other Private		
	Reading	Vocabulary	Mathematics	Reading	Vocabulary	Mathematics
Sophomores						
Coursework	.03	.03	-.05	.09	.08	.18
Homework	-.02	-.01	-.10	-.02	-.01	-.12
Attendance	-.10	-.07	-.13	-.01	-.01	-.02
Disciplinary climate	-.34	-.50	-.44	-.39	-.52	-.41
Student behavior	-.33	-.44	-.57	-.33	-.57	-.61
TOTAL	-.76	-.99	-1.29	-.66	-1.03	-.98
Seniors						
Coursework	-.01	-.01	-1.01	.06	.08	-.44
Homework	-.04	-.04	-.01	-.06	-.06	-.02
Attendance	-.06	-.03	-.15	-.03	-.01	-.06
Disciplinary climate	-.62	-.72	-.63	-.68	-.71	-.45
Student behavior	-.06	-.22	.40	-.06	-.21	.44
TOTAL	-.79	-1.02	-1.40	-.77	-.91	-.53

A.5 Means, standard deviations and correlations for variables used in analysis for chapters 6 and 7

Tables in this section give means, standard deviations, and correlations by grade and sector for the variables used in the analysis. Variable identification can be obtained from Appendix B.

TABLE A.5.1

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SOPHOMORES

OBS	NAME	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP	MOTEXP	HISPAN
1	MEAN	4.057	4.103	4.531	3.000	6.839	0.774	2.022	1.773	2.228	0.766	0.639	0.733	0.697	0.510	0.592	0.076
2	STDEV	1.748	2.180	2.552	2.057	1.924	0.419	0.868	0.888	1.138	0.424	0.480	0.442	0.460	0.500	0.491	0.265
3	BB101	1.000	0.274	0.343	-0.137	0.316	0.274	-0.092	-0.097	0.080	0.151	0.200	0.191	0.207	0.264	0.191	-0.108
4	BB042	0.274	1.000	0.547	-0.137	0.208	0.019	0.042	0.036	0.119	0.104	0.170	0.166	0.128	0.264	0.269	-0.096
5	BB039	0.343	0.547	1.000	-0.141	0.246	0.014	-0.080	-0.073	0.123	0.105	0.192	0.187	0.158	0.349	0.285	-0.107
6	SIBS	-0.137	-0.137	-0.141	1.000	0.010	-0.046	-0.035	-0.002	-0.087	-0.055	-0.103	-0.063	-0.131	-0.128	-0.111	0.075
7	BB103	0.316	0.208	0.246	0.010	1.000	0.205	-0.115	-0.107	0.055	0.170	0.192	0.205	0.162	0.155	0.115	-0.122
8	BOTHPAR	0.274	0.019	0.014	-0.046	0.205	1.000	-0.151	-0.152	0.018	0.138	0.158	0.140	0.147	0.192	0.088	-0.024
9	BB037B	-0.092	0.042	-0.080	-0.035	-0.115	-0.151	1.000	0.578	-0.026	-0.045	-0.084	-0.050	-0.063	-0.059	-0.004	0.017

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELATH	BB011C	BB011D	HMWRK	BB016	BB059E	MBB053E	MBB053F	MBB053G	MBY019A	MBY019B	MBY019E	MBY019F
1	0.146	0.216	0.329	0.277	0.178	0.279	0.217	0.226	3.752	2.315	0.293	2.486	2.348	2.213	1.626	1.448	1.931	2.742
2	0.353	0.412	0.470	0.447	0.382	0.448	0.412	0.418	3.221	1.345	0.455	0.222	0.244	0.219	0.209	0.293	0.249	0.187
3	-0.201	0.008	-0.108	0.071	0.043	0.048	0.099	0.093	0.116	-0.053	0.034	0.056	0.027	0.028	0.027	-0.071	0.106	0.151
4	-0.018	0.028	-0.075	-0.019	0.085	-0.022	0.160	0.121	0.158	-0.079	0.001	0.084	0.006	0.065	0.050	-0.083	0.115	0.088
5	-0.079	0.026	-0.076	-0.036	0.109	0.008	0.162	0.139	0.183	-0.078	-0.004	0.109	0.014	0.082	0.038	-0.121	0.134	0.126
6	0.153	-0.012	-0.006	0.017	-0.000	0.078	-0.043	-0.033	-0.042	0.081	0.040	-0.012	-0.024	-0.013	-0.006	0.011	-0.042	-0.081
7	-0.158	0.085	-0.120	0.138	-0.105	0.051	0.085	0.082	0.113	-0.076	-0.010	0.034	0.045	-0.016	0.077	0.021	0.047	0.110
8	-0.245	-0.008	-0.054	0.063	0.002	0.069	0.028	0.034	0.061	-0.118	-0.048	-0.000	0.037	-0.003	0.033	0.039	0.043	0.133
9	0.185	-0.049	0.086	-0.037	-0.008	-0.073	-0.016	-0.028	-0.035	0.039	0.025	0.000	0.000	0.016	-0.017	0.006	-0.032	-0.066

OBS	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTTOTV	TOTMATH	EDPLANS	YBOO7A	YBOO7B	BBO68A	BBO68B
1	2.394	0.367	0.295	0.461	0.221	7.036	3.603	3.689	9.396	8.921	10.674	18.396	2.267	0.396	0.432	0.507	0.582
2	0.331	0.155	0.456	0.498	0.415	0.736	2.000	1.883	4.036	3.845	4.320	7.321	1.045	0.489	0.495	0.500	0.493
3	-0.015	0.089	0.168	-0.050	-0.118	0.088	0.187	0.232	0.258	0.226	0.274	0.270	0.245	0.200	0.207	0.200	0.169
4	0.002	0.117	0.205	-0.080	-0.128	0.094	0.216	0.256	0.235	0.243	0.277	0.259	0.361	0.259	0.272	0.277	0.262
5	0.015	0.140	0.248	-0.089	-0.169	0.137	0.257	0.306	0.301	0.294	0.334	0.324	0.403	0.308	0.319	0.313	0.297
6	0.036	-0.010	-0.105	0.006	0.097	-0.044	-0.143	-0.168	-0.148	-0.163	-0.200	-0.152	-0.139	-0.092	-0.098	-0.104	-0.090
7	-0.079	-0.019	0.134	-0.032	-0.095	-0.050	0.171	0.179	0.222	0.189	0.214	0.234	0.166	0.142	0.142	0.125	0.101
8	-0.050	-0.034	0.070	0.004	-0.059	-0.056	0.116	0.116	0.160	0.132	0.146	0.163	0.061	0.040	0.043	0.036	0.036
9	-0.011	-0.026	-0.045	0.012	0.034	-0.008	-0.079	-0.089	-0.099	-0.088	-0.105	-0.109	-0.021	-0.016	-0.015	-0.008	-0.003

TABLE A.5.1 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SOPHOMORES

OBS	NAME	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP	MOTEXP	HISPAN
10	BB037C	-0.097	0.036	-0.073	-0.002	-0.107	-0.152	0.578	1.000	-0.042	-0.059	-0.094	-0.064	-0.069	-0.060	-0.005	0.031
11	BB047G	0.080	0.119	0.123	-0.087	0.055	0.018	-0.026	-0.042	1.000	0.061	0.068	0.094	0.077	0.137	0.143	-0.017
12	BB104C	0.151	0.104	0.105	-0.055	0.170	0.138	-0.045	-0.059	0.061	1.000	0.442	0.574	0.460	0.156	0.158	-0.073
13	BB104D	0.200	0.170	0.192	-0.103	0.192	0.158	-0.084	-0.094	0.068	0.442	1.000	0.440	0.418	0.182	0.175	-0.061
14	BB104G	0.191	0.166	0.187	-0.063	0.205	0.140	-0.050	-0.064	0.094	0.574	0.440	1.000	0.475	0.180	0.178	-0.097
15	BB104I	0.207	0.128	0.158	-0.131	0.162	0.147	-0.063	-0.069	0.077	0.460	0.418	0.475	1.000	0.173	0.162	-0.074
16	FATEXP	0.264	0.264	0.349	-0.128	0.155	0.192	-0.059	-0.060	0.137	0.156	0.182	0.180	0.173	1.000	0.691	-0.016
17	MOTEXP	0.191	0.269	0.285	-0.111	0.115	0.088	-0.004	-0.005	0.143	0.158	0.175	0.178	0.162	0.691	1.000	-0.006
18	HISPAN	-0.108	-0.096	-0.107	0.075	-0.122	-0.024	0.017	0.031	-0.017	-0.073	-0.061	-0.097	-0.074	-0.016	-0.006	1.000

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO1C	BBO1D	HMWRK	BBO16	BBO5E	MBBO53E	MBBO53F	MBBO53G	MYBO1 9A	MYBO1 9B	MYBO1 9E	MYBO1 9F
10	0.239	-0.045	0.118	-0.064	-0.021	-0.089	-0.014	-0.021	-0.035	0.037	0.006	0.004	0.001	0.013	-0.023	0.006	-0.056	-0.091
11	-0.029	-0.022	-0.024	0.008	0.044	0.008	0.103	0.073	0.170	-0.039	-0.068	0.036	0.007	0.034	0.010	-0.027	0.044	0.036
12	-0.114	0.043	-0.052	0.004	0.013	0.119	0.075	0.065	0.110	-0.071	0.036	0.029	0.040	0.025	0.022	0.005	0.056	0.106
13	-0.165	0.057	-0.141	0.035	0.072	0.117	0.090	0.084	0.130	-0.085	0.020	0.029	0.008	0.018	0.018	-0.041	0.083	0.116
14	-0.141	0.033	-0.084	0.014	0.053	0.104	0.104	0.085	0.124	-0.071	0.039	0.032	0.017	0.026	0.030	-0.017	0.076	0.118
15	-0.181	0.040	-0.098	0.033	0.040	0.112	0.089	0.085	0.108	-0.071	0.027	0.030	0.027	0.018	0.022	-0.012	0.067	0.133
16	-0.053	0.019	-0.021	-0.047	0.061	0.051	0.167	0.150	0.220	-0.131	-0.050	0.062	0.020	0.057	0.010	-0.077	0.074	0.085
17	0.007	0.021	-0.000	-0.055	0.042	0.043	0.165	0.148	0.219	-0.124	-0.049	0.053	0.009	0.049	0.011	-0.076	0.058	0.048
18	-0.118	-0.024	0.011	-0.079	0.105	0.165	-0.017	-0.022	-0.045	0.062	0.024	0.004	-0.033	0.023	-0.068	-0.040	-0.006	-0.055

OBS	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YBO77A	YBO72B	BBO68A	BBO68B
10	-0.004	-0.034	-0.046	-0.005	0.054	-0.002	-0.113	-0.103	-0.136	-0.126	-0.136	-0.147	-0.026	-0.011	-0.019	-0.017	-0.007
11	0.004	0.025	0.117	-0.066	-0.043	0.046	0.118	0.120	0.100	0.127	0.128	0.109	0.174	0.110	0.133	0.150	0.159
12	-0.018	0.023	0.127	-0.012	-0.093	-0.015	0.202	0.191	0.206	0.222	0.227	0.210	0.152	0.094	0.103	0.095	0.102
13	0.011	0.073	0.154	-0.036	-0.103	0.032	0.189	0.207	0.232	0.217	0.246	0.241	0.188	0.129	0.142	0.134	0.135
14	-0.006	0.056	0.149	-0.015	-0.114	-0.003	0.230	0.240	0.242	0.258	0.280	0.250	0.200	0.138	0.148	0.139	0.145
15	-0.013	0.036	0.143	-0.025	-0.101	0.012	0.233	0.237	0.256	0.263	0.283	0.268	0.176	0.122	0.134	0.126	0.118
16	-0.017	0.073	0.303	-0.103	-0.187	0.108	0.241	0.246	0.291	0.267	0.277	0.307	0.468	0.312	0.359	0.422	0.476
17	-0.025	0.061	0.303	-0.105	-0.181	0.107	0.242	0.239	0.285	0.267	0.270	0.297	0.496	0.301	0.360	0.435	0.519
18	0.061	0.051	-0.053	-0.001	0.055	0.069	-0.117	-0.109	-0.133	-0.137	-0.140	-0.140	-0.047	-0.045	-0.048	-0.031	-0.015

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SOPHOMORES 3

OBS	NAME_	BBO1O1	BBO42	BBO39	SIBSS	BBO13	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO14C	BBO14D	BBO14G	BBO141	FATEXP	MOTEXP	HISPAN
19	BLACK	-0.201	-0.018	-0.079	0.153	-0.158	-0.245	0.185	0.239	-0.029	-0.114	-0.165	-0.141	-0.181	-0.053	0.007	-0.118
20	REGION1	0.008	0.028	0.026	-0.012	0.085	-0.008	-0.049	-0.045	-0.022	0.043	0.057	0.033	0.040	0.019	0.021	-0.024
21	REGION2	-0.108	-0.075	-0.076	-0.006	-0.120	-0.054	0.086	0.118	-0.024	-0.052	-0.141	-0.084	-0.098	-0.021	-0.000	0.011
22	REGION3	0.071	-0.019	-0.036	0.017	0.138	0.063	-0.037	-0.064	0.008	0.004	0.035	0.014	0.033	-0.047	-0.055	-0.079
23	REGION4	0.043	0.085	0.109	-0.000	-0.105	0.002	-0.008	-0.021	0.044	0.013	0.072	0.053	0.040	0.061	0.042	0.105
24	RELCATH	0.048	-0.022	0.008	0.078	0.051	0.069	-0.073	-0.089	0.008	0.119	0.117	0.104	0.112	0.051	0.043	0.165
25	BBO11C	0.099	0.160	0.162	-0.043	0.085	0.028	-0.016	-0.014	0.103	0.075	0.090	0.104	0.089	0.167	0.165	-0.017
26	BBO11D	0.093	0.121	0.139	-0.033	0.082	0.034	-0.028	-0.021	0.073	0.065	0.084	0.085	0.085	0.150	0.148	-0.022
27	HMWRK	0.116	0.158	0.183	-0.042	0.113	0.061	-0.035	-0.035	0.170	0.110	0.130	0.124	0.108	0.220	0.219	-0.045

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO11C	BBO11D	HMWRK	BBO16	BBO05E	MBBO05E	MBBO05F	MBBO03G	MYBBO09A	MYBBO09B	MYBBO09E	MYBBO09F
19	1.000	-0.011	0.209	-0.108	-0.118	-0.202	-0.005	-0.021	-0.027	0.003	-0.006	-0.001	-0.010	0.007	-0.006	-0.041	-0.101	-0.298
20	-0.011	1.000	-0.368	-0.325	-0.244	0.192	0.027	0.017	0.072	0.012	0.034	-0.032	-0.107	-0.091	-0.047	-0.117	-0.132	-0.225
21	0.209	-0.368	1.000	-0.433	-0.326	-0.219	-0.008	-0.034	-0.069	-0.038	-0.086	0.032	0.267	0.114	0.024	0.173	-0.059	0.008
22	-0.108	-0.325	-0.433	1.000	-0.288	0.023	-0.035	0.013	0.009	-0.038	-0.032	-0.085	-0.053	-0.172	0.084	0.067	0.028	0.057
23	-0.118	-0.244	-0.326	-0.288	1.000	0.035	0.022	0.008	-0.003	0.079	0.106	0.095	-0.150	0.160	-0.077	-0.166	0.182	0.166
24	-0.202	0.192	-0.219	0.023	0.035	1.000	0.001	0.012	0.036	0.012	0.054	-0.013	-0.048	-0.029	-0.025	-0.072	0.020	0.027
25	-0.005	0.027	-0.008	-0.035	0.022	0.001	1.000	0.529	0.187	-0.086	-0.048	0.026	0.005	0.022	-0.001	-0.037	0.011	-0.010
26	-0.021	0.017	-0.034	0.013	0.008	0.012	0.529	1.000	0.177	-0.097	-0.050	0.021	0.005	0.005	0.014	-0.007	0.011	0.006
27	-0.027	0.072	-0.069	0.009	-0.003	0.036	0.187	0.177	1.000	-0.191	-0.172	0.068	0.037	0.041	0.069	-0.007	0.070	0.066

OBS	MABSENT	MCUACLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOCAB	TOTMATH	EDPLANS	YBO72A	YBO76B	BBO68A	BBO68B
19	0.010	-0.013	-0.039	-0.072	0.115	0.098	-0.215	-0.224	-0.264	-0.239	-0.293	-0.273	0.018	0.001	0.004	0.035	0.061
20	0.025	0.053	0.130	-0.139	0.027	0.115	0.043	0.082	0.053	0.045	0.088	0.066	0.028	0.032	0.029	0.022	0.013
21	-0.172	-0.251	-0.061	0.007	0.053	-0.084	-0.115	-0.141	-0.166	-0.132	-0.179	-0.177	-0.033	-0.023	-0.022	-0.019	-0.012
22	-0.134	-0.086	-0.050	0.066	-0.022	-0.126	0.065	0.023	0.097	0.068	0.050	0.094	-0.030	-0.032	-0.043	-0.043	-0.049
23	0.341	0.348	-0.006	0.063	-0.068	0.128	0.020	0.059	0.033	0.035	0.066	0.036	0.046	0.030	0.045	0.050	0.058
24	0.047	0.082	0.057	-0.023	-0.023	0.079	0.065	0.073	0.092	0.069	0.090	0.095	0.027	0.012	0.014	0.012	0.024
25	-0.009	0.024	0.265	-0.157	-0.088	0.064	0.225	0.238	0.234	0.250	0.252	0.252	0.260	0.182	0.196	0.204	0.197
26	-0.006	0.004	0.231	-0.129	-0.084	0.014	0.210	0.184	0.308	0.234	0.199	0.329	0.241	0.155	0.173	0.185	0.172
27	-0.064	0.002	0.275	-0.150	-0.106	0.039	0.207	0.195	0.250	0.217	0.217	0.259	0.338	0.190	0.224	0.256	0.272

TABLE A.5.1 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SOPHOMORES

OBS	NAME	BBO161	BBO429	BBO39S	SIBS	BBO13	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO40C	BBO40D	BBO40G	BBO41I	FATEXP	MOTEXP	IISPAN
28	BBO16	-0.053	-0.079	-0.078	0.081	-0.076	-0.118	0.039	0.037	-0.039	-0.071	-0.085	-0.071	-0.071	-0.131	-0.124	0.062
29	BBO59E	0.034	0.001	-0.004	0.040	-0.010	-0.048	0.025	0.006	-0.068	0.036	0.020	0.039	0.027	-0.050	-0.049	0.024
30	MBBO53E	0.056	0.084	0.109	-0.012	0.034	-0.000	0.000	0.004	0.036	0.029	0.029	0.032	0.030	0.062	0.053	0.004
31	MBBO53F	0.027	0.006	0.014	-0.024	0.045	0.037	0.000	0.001	0.007	0.040	0.008	0.017	0.027	0.020	0.009	-0.033
32	MBBO53G	0.028	0.065	0.082	-0.013	-0.016	-0.003	0.016	0.013	0.034	0.025	0.018	0.026	0.018	0.057	0.049	0.023
33	MYBO19A	0.027	0.050	0.038	-0.006	0.077	0.033	-0.017	-0.023	0.010	0.022	0.018	0.030	0.022	0.010	0.011	-0.068
34	MYBO19B	-0.071	-0.083	-0.121	0.011	0.021	0.039	0.006	0.006	-0.027	0.005	-0.041	-0.017	-0.012	-0.077	-0.076	-0.040
35	MYBO19E	0.106	0.115	0.134	-0.042	0.047	0.043	-0.032	-0.056	0.044	0.056	0.083	0.076	0.067	0.074	0.058	-0.006
36	MYBO19F	0.151	0.088	0.126	-0.081	0.110	0.133	-0.066	-0.091	0.036	0.106	0.116	0.118	0.133	0.085	0.048	-0.055

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELIGATH	BBO11C	BBO11D	HMWRK	BBO16	BBO59E	MBBO53E	MBBO53F	MBBO53G	MYBO19A	MYBO19B	MYBO19E	MYBO19F
28	0.003	0.012	-0.038	-0.038	0.079	0.012	-0.086	-0.097	-0.191	1.000	0.294	-0.036	-0.078	-0.031	-0.083	-0.065	-0.036	-0.069
29	-0.006	0.034	-0.086	-0.032	0.106	0.054	-0.048	-0.050	-0.172	0.294	1.000	-0.016	-0.137	-0.009	-0.108	-0.195	-0.020	-0.054
30	-0.001	-0.032	0.032	-0.085	0.095	-0.013	0.026	0.021	0.068	-0.036	-0.016	1.000	0.525	0.679	0.277	0.130	0.374	0.309
31	-0.010	-0.107	0.267	-0.053	-0.150	-0.048	0.005	0.005	0.037	-0.078	-0.137	0.525	1.000	0.508	0.321	0.386	0.256	0.312
32	0.007	-0.091	0.114	-0.172	0.160	-0.029	0.022	0.005	0.041	-0.031	-0.009	0.679	0.508	1.000	0.224	0.065	0.376	0.284
33	-0.006	-0.047	0.024	0.084	-0.077	-0.025	-0.001	0.014	0.069	-0.083	-0.108	0.277	0.321	0.224	1.000	0.593	0.427	0.321
34	-0.041	-0.117	0.173	0.067	-0.166	-0.072	-0.037	-0.007	-0.007	-0.065	-0.195	0.130	0.386	0.065	0.593	1.000	0.257	0.254
35	-0.101	-0.132	-0.059	0.028	0.182	0.020	0.011	0.011	0.070	-0.036	-0.020	0.374	0.256	0.376	0.427	0.257	1.000	0.546
36	-0.298	-0.225	0.008	0.057	0.166	0.027	-0.010	0.006	0.066	-0.069	-0.054	0.309	0.312	0.284	0.321	0.254	0.546	1.000

OBS	MABSENT	MCUACL	ACADEMAL	GENERALL	VOCAGIZE	LGBOTH	READBOTH	VOCBOTH	MATHBOTH	TOTTOTAL	TOTVOC	TOTMATH	EDPANS	YBOOA7	YBOOB2	BBOOA6	BBOOB8
28	0.178	0.114	-0.145	0.078	0.051	0.032	-0.129	-0.120	-0.188	-0.135	-0.133	-0.191	-0.189	-0.072	-0.094	-0.119	-0.153
29	0.150	0.273	-0.098	0.077	0.015	0.112	-0.058	-0.042	-0.080	-0.052	-0.043	-0.082	-0.113	-0.031	-0.050	-0.080	-0.114
30	-0.134	-0.044	0.058	-0.046	-0.004	-0.037	0.060	0.064	0.073	0.068	0.069	0.081	0.093	0.069	0.071	0.071	0.071
31	-0.320	-0.426	0.048	-0.053	0.018	-0.063	0.031	0.017	0.023	0.026	0.016	0.025	0.033	0.015	0.012	0.012	0.009
32	-0.106	-0.016	0.034	-0.033	0.005	0.070	0.025	0.047	0.029	0.030	0.043	0.034	0.082	0.053	0.059	0.066	0.064
33	-0.272	-0.291	0.035	-0.002	-0.027	-0.362	0.082	0.054	0.080	0.081	0.059	0.079	0.039	0.017	0.017	0.009	0.018
34	-0.245	-0.601	-0.034	0.018	0.022	-0.584	0.009	-0.035	-0.008	0.005	-0.037	-0.014	-0.078	-0.070	-0.076	-0.084	-0.078
35	-0.073	-0.012	0.050	0.021	-0.070	-0.153	0.111	0.121	0.133	0.122	0.133	0.143	0.099	0.065	0.069	0.062	0.069
36	-0.157	-0.092	0.052	0.057	-0.108	-0.208	0.166	0.171	0.206	0.193	0.204	0.211	0.060	0.052	0.059	0.045	0.037

TABLE A.5.1 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SOPHOMORES 5

OBS	NAME	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037	BB037	BB047	BB047	BB104	BB104	BB104	FATEXP	MOTEXP	HISPAN
37	MABSENT	-0.015	0.002	0.015	0.036	-0.079	-0.050	-0.011	-0.004	0.004	-0.018	0.011	-0.006	-0.013	-0.017	-0.025	0.061
38	MCUTCLS	0.089	0.117	0.140	-0.010	-0.019	-0.034	-0.026	-0.034	0.025	0.023	0.073	0.056	0.036	0.073	0.061	0.051
39	ACADEM	0.168	0.205	0.248	-0.105	0.134	0.070	-0.045	-0.046	0.117	0.127	0.154	0.149	0.143	0.303	0.303	-0.053
40	GENERAL	-0.050	-0.080	-0.089	0.006	-0.032	0.004	0.012	-0.005	-0.066	-0.012	-0.036	-0.015	-0.025	-0.103	-0.105	-0.001
41	VOCATNL	-0.118	-0.128	-0.169	0.097	-0.095	-0.059	0.034	0.054	-0.043	-0.093	-0.103	-0.114	-0.101	-0.187	-0.181	0.055
42	LGSIZE	0.088	0.094	0.137	-0.044	-0.050	-0.056	-0.008	-0.002	0.046	-0.015	0.032	-0.003	0.012	0.108	0.107	0.069
43	READBOTH	0.187	0.216	0.257	-0.143	0.171	0.116	-0.079	-0.113	0.118	0.202	0.189	0.230	0.233	0.241	0.242	-0.117
44	VOCBOTH	0.232	0.256	0.306	-0.168	0.179	0.116	-0.089	-0.103	0.120	0.191	0.207	0.240	0.237	0.246	0.239	-0.109
45	MATHBOTH	0.258	0.235	0.301	-0.148	0.222	0.160	-0.099	-0.136	0.100	0.206	0.232	0.242	0.256	0.291	0.285	-0.133

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RECATH	BBO11C	BBO11D	HMWRK6	BBO59E	MBBO553E	MBBO553F	MBBO553G	MBBO551A	MBBO551B	MBBO551E	MBBO551F
37	0.010	0.025	-0.172	-0.134	0.341	0.047	-0.009	-0.006	-0.064	0.178	0.150	-0.134	-0.320	-0.106	-0.272	-0.245	-0.073	-0.157
38	-0.013	0.053	-0.251	-0.086	0.348	0.082	0.024	0.004	0.002	0.114	0.273	-0.044	-0.426	-0.016	-0.291	-0.601	-0.012	-0.092
39	-0.039	0.130	-0.061	-0.050	-0.006	0.057	0.265	0.231	0.275	-0.145	-0.098	0.058	0.048	0.034	0.035	-0.034	0.050	0.052
40	-0.072	-0.139	0.007	0.066	0.063	-0.023	-0.157	-0.129	-0.150	0.078	0.077	-0.046	-0.053	-0.033	-0.002	0.018	0.021	0.057
41	0.115	0.027	0.053	-0.022	-0.068	-0.023	-0.088	-0.084	-0.106	0.051	0.015	-0.004	0.018	0.005	-0.027	0.022	-0.070	-0.108
42	0.098	0.115	-0.084	-0.126	0.128	0.079	0.064	0.014	0.039	0.032	0.112	-0.037	-0.063	0.070	-0.362	-0.584	-0.153	-0.208
43	-0.215	0.043	-0.115	0.065	0.020	0.065	0.225	0.210	0.207	-0.129	-0.058	0.060	0.031	0.025	0.082	0.009	0.111	0.166
44	-0.224	0.082	-0.141	0.023	0.059	0.073	0.238	0.184	0.195	-0.120	-0.042	0.064	0.017	0.047	0.054	-0.035	0.121	0.171
45	-0.264	0.053	-0.166	0.097	0.033	0.092	0.234	0.308	0.250	-0.188	-0.080	0.073	0.023	0.029	0.080	-0.008	0.133	0.206

OBS	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTMATH	TOTVOC	EDPLANS	YBO77A	YBO72B	BBO68A	BBO68B
37	1.000	0.538	-0.051	0.027	0.012	0.075	-0.053	-0.042	-0.067	-0.053	-0.045	-0.061	-0.021	-0.021	-0.019	-0.016	-0.015
38	0.538	1.000	0.002	0.030	-0.046	0.331	0.020	0.053	0.023	0.027	0.057	0.033	0.075	0.069	0.075	0.076	0.069
39	-0.051	0.002	1.000	-0.598	-0.344	0.088	0.299	0.313	0.355	0.332	0.340	0.372	0.408	0.249	0.285	0.317	0.333
40	0.027	0.030	-0.598	1.000	-0.493	-0.100	-0.096	-0.106	-0.112	-0.098	-0.095	-0.123	-0.191	-0.112	-0.128	-0.143	-0.154
41	0.012	-0.046	-0.344	-0.493	1.000	0.013	-0.195	-0.197	-0.232	-0.224	-0.234	-0.240	-0.206	-0.136	-0.158	-0.170	-0.171
42	0.075	0.331	0.088	-0.100	0.013	1.000	-0.012	0.041	0.010	-0.014	0.032	0.016	0.119	0.097	0.112	0.126	0.111
43	-0.053	0.020	0.299	-0.096	-0.195	-0.012	1.000	0.533	0.567	0.886	0.617	0.595	0.340	0.219	0.234	0.240	0.227
44	-0.042	0.053	0.313	-0.106	-0.197	0.041	0.533	1.000	0.517	0.607	0.872	0.545	0.338	0.244	0.258	0.254	0.239
45	-0.067	0.023	0.355	-0.112	-0.232	0.010	0.567	0.517	1.000	0.640	0.606	0.943	0.396	0.275	0.290	0.294	0.282

TABLE A.5.1 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SOPHOMORES G

OBS	NAME	BBO1	BBO42	BBO39	SIBS	BBO13	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO104C	BBO104D	BBO104G	BBO104I	FATEXP	MOTEXP	HISPAN
46	TOTREAD	0.226	0.243	0.294	-0.163	0.189	0.132	-0.088	-0.126	0.127	0.222	0.217	0.258	0.263	0.267	0.267	-0.137
47	TOTVOC	0.274	0.277	0.334	-0.200	0.214	0.146	-0.105	-0.136	0.128	0.227	0.246	0.280	0.283	0.277	0.270	-0.140
48	TOTMATH	0.270	0.259	0.324	-0.152	0.234	0.163	-0.109	-0.147	0.109	0.210	0.241	0.250	0.268	0.307	0.297	-0.140
49	EDPLANS	0.245	0.361	0.403	-0.139	0.166	0.061	-0.021	-0.026	0.174	0.152	0.188	0.200	0.176	0.468	0.496	-0.047
50	YBO72A	0.200	0.259	0.308	-0.092	0.142	0.040	-0.016	-0.011	0.110	0.094	0.129	0.138	0.122	0.312	0.301	-0.045
51	YBO72B	0.207	0.272	0.319	-0.098	0.142	0.043	-0.015	-0.019	0.133	0.103	0.142	0.148	0.134	0.359	0.360	-0.048
52	BBO68A	0.200	0.277	0.313	-0.104	0.125	0.036	-0.008	-0.017	0.150	0.095	0.134	0.139	0.126	0.422	0.435	-0.031
53	BBO68B	0.169	0.262	0.297	-0.090	0.101	0.036	-0.003	-0.007	0.159	0.102	0.135	0.145	0.118	0.476	0.519	-0.015

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO11C	BBO11D	HMWRK	BBO16	BBO59E	MBBO53E	MBBO53F	MBBO53G	MYBO19A	MYBO19B	MYBO19E
46	-0.239	0.045	-0.132	0.068	0.035	0.069	0.250	0.234	0.217	-0.135	-0.052	0.068	0.026	0.030	0.081	0.005	0.122
47	-0.293	0.088	-0.179	0.050	0.066	0.090	0.252	0.199	0.217	-0.133	-0.043	0.069	0.016	0.043	0.059	-0.037	0.133
48	-0.273	0.066	-0.177	0.094	0.036	0.095	0.252	0.329	0.259	-0.191	-0.082	0.081	0.025	0.034	0.079	-0.014	0.143
49	0.018	0.028	-0.033	-0.030	0.046	0.027	0.260	0.241	0.338	-0.189	-0.113	0.093	0.033	0.082	0.039	-0.078	0.099
50	0.001	0.032	-0.023	-0.032	0.030	0.012	0.182	0.155	0.190	-0.072	-0.031	0.069	0.015	0.053	0.017	-0.070	0.065
51	0.004	0.029	-0.022	-0.043	0.045	0.014	0.196	0.173	0.224	-0.094	-0.050	0.071	0.012	0.059	0.017	-0.076	0.069
52	0.035	0.022	-0.019	-0.043	0.050	0.012	0.204	0.185	0.256	-0.119	-0.080	0.071	0.012	0.066	0.009	-0.084	0.062
53	0.061	0.013	-0.012	-0.049	0.058	0.024	0.197	0.172	0.272	-0.153	-0.114	0.071	0.009	0.064	0.018	-0.078	0.069

OBS	MYBO19F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YBO72A	YBO72B	BBO68A	BBO68B
46	0.193	-0.053	0.027	0.332	-0.098	-0.224	-0.014	0.886	0.607	0.640	1.000	0.706	0.672	0.374	0.257	0.272	0.275	0.255
47	0.204	-0.045	0.057	0.340	-0.095	-0.234	0.032	0.617	0.872	0.606	0.706	1.000	0.633	0.374	0.265	0.281	0.277	0.261
48	0.211	-0.061	0.033	0.372	-0.123	-0.240	0.016	0.595	0.545	0.943	0.672	0.633	1.000	0.419	0.286	0.305	0.311	0.299
49	0.060	-0.021	0.075	0.408	-0.191	-0.206	0.119	0.340	0.338	0.396	0.374	0.374	0.419	1.000	0.358	0.422	0.511	0.599
50	0.052	-0.021	0.069	0.249	-0.112	-0.136	0.097	0.219	0.244	0.275	0.257	0.265	0.286	0.358	1.000	0.836	0.591	0.362
51	0.059	-0.019	0.075	0.285	-0.128	-0.158	0.112	0.234	0.258	0.290	0.272	0.281	0.305	0.422	0.836	1.000	0.712	0.445
52	0.045	-0.016	0.076	0.317	-0.143	-0.170	0.126	0.240	0.254	0.294	0.275	0.277	0.311	0.511	0.591	0.712	1.000	0.652
53	0.037	-0.015	0.069	0.333	-0.154	-0.171	0.111	0.227	0.239	0.282	0.255	0.261	0.299	0.599	0.362	0.445	0.652	1.000

TABLE A.5.2

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SOPHOMORES 1

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
1	MEAN	4.887	5.207	5.913	2.811	7.585	0.851	1.889	1.599	2.301	0.864	0.801	0.856	0.814	0.726
2	STDEV	1.662	2.502	2.758	1.852	1.819	0.356	0.842	0.829	1.138	0.343	0.399	0.351	0.389	0.446
3	BB101	1.000	0.273	0.338	-0.042	0.314	0.206	-0.108	-0.078	0.067	0.082	0.126	0.101	0.124	0.265
4	BB042	0.273	1.000	0.538	-0.017	0.234	-0.034	0.051	0.072	0.038	0.071	0.151	0.147	0.074	0.199
5	BB039	0.338	0.538	1.000	-0.016	0.279	0.022	-0.117	-0.076	0.021	0.070	0.137	0.141	0.081	0.266
6	SIBS	-0.042	-0.017	-0.016	1.000	0.167	0.017	-0.103	-0.086	-0.135	-0.000	0.015	0.016	-0.069	-0.090
7	BB103	0.314	0.234	0.279	0.167	1.000	0.159	-0.156	-0.089	0.042	0.128	0.151	0.167	0.086	0.160
8	BOTHPAR	0.206	-0.034	0.022	0.017	0.159	1.000	-0.152	-0.114	0.017	0.047	0.066	0.052	0.053	0.225
9	BB037B	-0.108	0.051	-0.117	-0.103	-0.156	-0.152	1.000	0.545	0.012	-0.049	-0.057	-0.034	-0.033	-0.064
10	BB037C	-0.078	0.072	-0.076	-0.086	-0.089	-0.114	0.545	1.000	-0.003	-0.065	-0.050	-0.041	-0.024	-0.077
11	BB047G	0.067	0.038	0.021	-0.135	0.042	0.017	0.012	-0.003	1.000	0.109	0.055	0.085	0.055	0.123

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	HMWRK	BB016	BB059E	MBB053E
1	0.778	0.064	0.045	0.329	0.254	0.266	0.151	0.619	0.217	0.270	5.721	1.913	0.168	2.984
2	0.415	0.245	0.207	0.470	0.435	0.442	0.358	0.486	0.412	0.444	3.773	1.090	0.374	0.337
3	0.181	-0.078	-0.081	-0.010	0.037	-0.069	0.054	-0.036	0.077	0.073	0.138	0.001	0.067	0.169
4	0.203	-0.054	0.023	-0.050	0.064	-0.112	0.129	-0.168	0.044	0.058	0.215	-0.060	0.069	0.284
5	0.200	-0.097	-0.072	-0.024	0.066	-0.113	0.094	-0.122	0.074	0.066	0.190	-0.065	0.065	0.231
6	-0.116	0.029	-0.028	-0.019	-0.073	0.134	-0.053	0.231	-0.010	-0.034	-0.106	-0.001	0.007	-0.118
7	0.115	-0.125	-0.083	-0.026	-0.000	0.056	-0.035	0.006	0.047	0.041	0.114	-0.039	0.057	0.146
8	0.085	-0.034	-0.119	0.015	0.016	0.002	-0.042	0.049	0.048	0.037	0.005	-0.058	-0.021	0.024
9	-0.011	0.048	0.192	-0.051	0.007	0.019	0.036	-0.055	-0.006	-0.033	-0.000	0.016	0.001	0.010
10	-0.029	0.043	0.215	-0.089	0.069	-0.035	0.078	-0.115	-0.027	-0.052	-0.021	0.045	0.038	0.002
11	0.114	-0.031	-0.002	0.002	0.016	0.008	-0.032	-0.032	0.111	0.081	0.175	-0.018	-0.127	0.078

OBS	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATII
1	2.873	2.415	2.298	2.146	2.444	2.935	2.005	0.228	0.597	0.336	0.057	6.185	0.650
2	0.290	0.317	0.296	0.415	0.296	0.077	0.308	0.137	0.491	0.472	0.231	0.962	0.477
3	0.020	0.096	0.145	-0.013	0.156	0.140	-0.074	0.156	0.163	-0.132	-0.076	-0.022	-0.037
4	0.008	0.214	0.151	-0.033	0.264	0.205	-0.036	0.216	0.213	-0.168	-0.099	-0.107	-0.169
5	0.009	0.159	0.137	-0.069	0.245	0.173	-0.013	0.235	0.233	-0.187	-0.105	-0.063	-0.146
6	0.078	-0.074	-0.130	-0.048	-0.142	-0.115	-0.005	-0.074	-0.088	0.075	0.029	0.150	0.163
7	0.057	0.134	0.054	-0.043	0.089	0.118	-0.052	0.087	0.114	-0.084	-0.083	0.023	-0.018
8	0.046	0.033	0.006	0.019	-0.041	0.028	-0.060	-0.034	0.005	0.008	-0.012	0.046	0.017
9	0.011	0.015	0.036	0.089	-0.020	-0.026	-0.022	-0.051	-0.016	0.017	-0.007	-0.017	0.013
10	-0.026	0.011	0.033	0.088	-0.016	-0.021	-0.006	-0.014	-0.034	0.010	0.046	-0.081	-0.023
11	0.023	0.049	0.056	-0.001	0.070	0.083	-0.052	-0.012	0.128	-0.095	-0.070	-0.002	-0.007

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YB072A	YB072B	BB068A	BB068B
1	0.348	0.003	4.336	4.655	11.132	10.513	12.975	21.832	2.809	0.555	0.606	0.711	0.759
2	0.476	0.051	1.961	1.892	3.767	3.716	4.108	6.957	0.977	0.497	0.489	0.453	0.427
3	0.033	0.045	0.092	0.184	0.164	0.122	0.183	0.150	0.231	0.200	0.203	0.206	0.169
4	0.164	0.051	0.202	0.226	0.179	0.202	0.241	0.187	0.303	0.256	0.254	0.226	0.199
5	0.141	0.052	0.189	0.282	0.234	0.241	0.280	0.253	0.342	0.278	0.297	0.256	0.219
6	-0.162	-0.017	-0.088	-0.109	-0.067	-0.085	-0.131	-0.057	-0.135	-0.076	-0.096	-0.100	-0.111
7	0.014	0.035	0.111	0.119	0.157	0.142	0.108	0.169	0.139	0.153	0.170	0.151	0.108
8	-0.017	-0.000	0.071	0.034	0.041	0.079	0.031	0.053	0.046	-0.023	0.009	0.033	0.039
9	-0.012	-0.012	-0.054	-0.067	-0.092	-0.070	-0.074	-0.093	0.001	-0.042	-0.037	-0.010	0.003
10	0.023	0.003	-0.093	-0.104	-0.153	-0.101	-0.110	-0.151	-0.016	-0.010	0.009	-0.000	0.009
11	0.005	0.015	0.091	0.057	0.052	0.102	0.088	0.037	0.143	0.077	0.105	0.111	0.132

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SOPHOMORES 2

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB101C	BB104D	BB104G	BB104I	FATEXP
12	BB104C	0.082	0.071	0.070	-0.000	0.128	0.047	-0.049	-0.065	0.109	1.000	0.433	0.541	0.417	0.103
13	BB104D	0.126	0.151	0.137	0.015	0.151	0.066	-0.057	-0.050	0.055	0.433	1.000	0.473	0.348	0.127
14	BB104G	0.101	0.147	0.141	0.016	0.167	0.052	-0.034	-0.041	0.085	0.541	0.473	1.000	0.465	0.143
15	BB104I	0.124	0.074	0.081	-0.069	0.086	0.053	-0.033	-0.024	0.055	0.417	0.348	0.465	1.000	0.110
16	FATEXP	0.265	0.199	0.266	-0.090	0.160	0.225	-0.064	-0.077	0.123	0.103	0.127	0.143	0.110	1.000
17	MOTEXP	0.181	0.203	0.200	-0.116	0.115	0.085	-0.011	-0.029	0.114	0.084	0.118	0.119	0.109	0.684
18	HISPAN	-0.078	-0.054	-0.097	0.029	-0.125	-0.034	0.048	0.043	-0.031	-0.058	-0.093	-0.077	-0.063	-0.003
19	BLACK	-0.081	0.023	-0.072	-0.028	-0.083	-0.119	0.192	0.215	-0.002	-0.060	-0.055	-0.062	-0.078	-0.028
20	REGION1	-0.010	-0.050	-0.024	-0.019	-0.026	0.015	-0.051	-0.089	0.002	0.095	0.072	0.080	0.094	-0.000
21	REGION2	0.037	0.064	0.066	-0.073	-0.000	0.016	0.007	0.069	0.016	-0.069	-0.105	-0.092	-0.059	0.037
22	REGION3	-0.069	-0.112	-0.113	0.134	0.056	0.002	0.019	-0.035	0.008	-0.040	0.009	-0.033	-0.042	-0.050

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	HMWRK	BB016	BB059E	MBB053E
12	0.084	-0.058	-0.060	0.095	-0.069	-0.040	0.009	0.138	0.071	0.029	0.047	-0.059	0.017	0.013
13	0.118	-0.093	-0.055	0.072	-0.105	0.009	0.022	0.112	0.074	0.065	0.123	-0.060	0.024	0.078
14	0.119	-0.077	-0.062	0.080	-0.092	-0.033	0.047	0.116	0.083	0.057	0.099	-0.031	0.019	0.091
15	0.109	-0.063	-0.078	0.094	-0.059	-0.042	0.000	0.097	0.069	0.080	0.065	-0.059	0.009	0.041
16	0.684	-0.003	-0.028	-0.000	0.037	-0.050	0.017	0.016	0.108	0.112	0.159	-0.098	-0.007	0.153
17	1.000	-0.007	0.027	-0.021	0.054	-0.048	0.022	0.029	0.115	0.132	0.162	-0.117	-0.046	0.142
18	-0.007	1.000	-0.057	-0.095	0.023	-0.021	0.123	0.114	-0.040	-0.051	-0.042	0.033	0.042	-0.018
19	0.027	-0.057	1.000	0.004	-0.011	0.010	-0.005	-0.092	0.014	0.001	0.005	-0.019	-0.054	-0.014
20	-0.021	-0.095	0.004	1.000	-0.408	-0.422	-0.296	0.112	0.028	0.050	0.166	0.013	0.026	0.021
21	0.054	0.023	-0.011	-0.408	1.000	-0.351	-0.246	-0.231	-0.044	-0.036	-0.090	-0.004	-0.025	-0.054
22	-0.048	-0.021	0.010	-0.422	-0.351	1.000	-0.254	0.214	0.031	-0.005	-0.104	-0.043	-0.084	-0.134

OBS	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
12	0.042	0.015	0.017	-0.016	0.063	0.090	-0.014	0.018	0.085	-0.033	-0.091	0.024	-0.006
13	0.055	0.073	0.075	0.005	0.101	0.097	-0.046	0.038	0.108	-0.067	-0.078	0.012	0.013
14	0.077	0.082	0.065	0.001	0.089	0.114	-0.021	0.046	0.138	-0.085	-0.084	0.010	-0.015
15	0.022	0.048	0.085	0.026	0.072	0.106	-0.050	0.010	0.095	-0.041	-0.090	-0.004	-0.022
16	0.082	0.112	0.185	0.061	0.112	0.121	-0.137	0.053	0.247	-0.171	-0.167	-0.008	0.018
17	0.082	0.130	0.227	0.086	0.125	0.145	-0.184	0.014	0.272	-0.167	-0.218	-0.009	0.064
18	0.059	-0.028	0.012	0.030	-0.038	-0.114	0.011	0.022	-0.009	0.009	0.002	0.002	0.057
19	-0.047	-0.008	0.032	0.081	-0.092	-0.035	-0.000	-0.066	0.005	-0.012	0.011	0.003	0.084
20	0.141	-0.033	-0.122	-0.214	-0.175	-0.000	0.071	-0.036	0.047	-0.059	0.051	0.280	0.046
21	-0.244	-0.048	0.131	0.056	0.082	0.034	-0.128	0.045	0.041	-0.020	-0.059	-0.281	-0.200
22	0.128	-0.070	-0.058	0.143	-0.196	-0.021	-0.132	-0.261	-0.108	0.097	0.017	0.231	0.293

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YBO72A	YBO72B	BBO68A	BBO68B
12	0.005	0.012	0.103	0.134	0.092	0.120	0.166	0.095	0.101	0.047	0.066	0.088	0.086
13	-0.015	0.014	0.144	0.197	0.156	0.151	0.209	0.155	0.148	0.119	0.121	0.140	0.125
14	0.014	0.017	0.170	0.217	0.179	0.215	0.255	0.179	0.159	0.132	0.146	0.112	0.135
15	0.021	0.016	0.163	0.172	0.146	0.165	0.210	0.157	0.148	0.096	0.130	0.129	0.129
16	-0.020	0.023	0.183	0.195	0.224	0.199	0.215	0.227	0.411	0.254	0.297	0.358	0.393
17	-0.067	0.024	0.201	0.197	0.242	0.216	0.240	0.228	0.426	0.241	0.291	0.368	0.422
18	-0.056	-0.011	-0.074	-0.084	-0.102	-0.095	-0.114	-0.114	-0.027	-0.029	-0.030	-0.042	-0.022
19	-0.084	0.002	-0.036	-0.101	-0.100	-0.049	-0.098	-0.111	0.070	0.020	0.023	0.033	0.060
20	-0.044	-0.017	0.066	0.082	0.062	0.087	0.081	0.074	0.058	0.043	0.048	0.037	0.004
21	0.197	0.024	-0.022	-0.064	-0.013	-0.033	-0.057	-0.036	0.010	0.030	0.026	0.029	0.025
22	-0.295	0.013	-0.044	-0.075	-0.068	-0.058	-0.082	-0.059	-0.110	-0.094	-0.096	-0.073	-0.067

TABLE A.5.2 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SOPHOMORES 3

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
23	REGION4	0.054	0.129	0.094	-0.053	-0.035	-0.042	0.036	0.078	-0.032	0.009	0.022	0.047	0.000	0.017
24	RELCATH	-0.036	-0.168	-0.122	0.231	0.006	0.049	-0.055	-0.115	-0.032	0.138	0.112	0.116	0.097	0.016
25	BB011C	0.077	0.044	0.074	-0.010	0.047	0.048	-0.006	-0.027	0.111	0.071	0.074	0.083	0.069	0.108
26	BB011D	0.073	0.058	0.066	-0.034	0.041	0.037	-0.033	-0.052	0.081	0.029	0.065	0.057	0.080	0.112
27	HMWRK	0.138	0.215	0.190	-0.106	0.114	0.005	-0.000	-0.021	0.175	0.047	0.123	0.099	0.065	0.159
28	BB016	0.001	-0.060	-0.065	-0.001	-0.039	-0.058	0.016	0.045	-0.018	-0.059	-0.060	-0.031	-0.059	-0.098
29	BB059E	0.067	0.069	0.065	0.007	0.057	-0.021	0.001	0.038	-0.127	0.017	0.024	0.019	0.009	-0.007
30	MBB053E	0.169	0.284	0.231	-0.118	0.146	0.024	0.010	0.002	0.078	0.013	0.078	0.091	0.041	0.153
31	MBB053F	0.020	0.008	0.009	0.078	0.057	0.046	0.011	-0.026	0.023	0.042	0.055	0.077	0.022	0.082
32	MBB053G	0.096	0.214	0.159	-0.074	0.134	0.033	0.015	0.011	0.049	0.015	0.073	0.082	0.048	0.112
33	MYB019A	0.145	0.151	0.137	-0.130	0.054	0.006	0.036	0.033	0.056	0.017	0.075	0.065	0.085	0.185

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	HMWRK	BB016	BB059E	MBB053E
23	0.022	0.123	-0.005	-0.296	-0.246	-0.254	1.000	-0.130	-0.022	-0.016	0.020	0.041	0.099	0.203
24	0.029	0.114	-0.092	0.112	-0.231	0.214	-0.130	1.000	0.068	0.051	-0.029	-0.125	-0.105	-0.200
25	0.115	-0.040	0.014	0.028	-0.044	0.031	-0.022	0.068	1.000	0.492	0.150	-0.043	-0.007	-0.029
26	0.132	-0.051	0.001	0.050	-0.036	-0.005	-0.016	0.051	0.492	1.000	0.147	-0.090	-0.062	0.044
27	0.162	-0.042	0.005	0.166	-0.090	-0.104	0.020	-0.029	0.150	0.147	1.000	-0.137	-0.103	0.286
28	-0.117	0.033	-0.019	0.013	-0.004	-0.043	0.041	-0.125	-0.043	-0.090	-0.137	1.000	0.187	-0.078
29	-0.046	0.042	-0.054	0.026	-0.025	-0.084	0.099	-0.105	-0.007	-0.062	-0.103	0.187	1.000	0.049
30	0.142	-0.018	-0.014	0.021	-0.054	-0.134	0.203	-0.200	-0.029	0.044	0.286	-0.078	0.049	1.000
31	0.082	0.059	-0.047	0.141	-0.244	0.128	-0.047	0.356	-0.007	0.029	0.092	-0.153	-0.115	0.278
32	0.130	-0.028	-0.008	-0.033	-0.048	-0.070	0.187	-0.036	-0.031	0.022	0.180	-0.110	-0.021	0.752
33	0.227	0.012	0.032	-0.122	0.131	-0.058	0.073	-0.031	-0.030	0.065	0.166	-0.158	-0.106	0.470

OBS	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
23	-0.047	0.187	0.073	0.038	0.373	-0.016	0.225	0.317	0.022	-0.018	-0.016	-0.308	-0.179
24	0.356	-0.036	-0.031	0.091	-0.322	-0.162	-0.255	-0.343	0.017	-0.028	0.042	0.468	0.692
25	-0.007	-0.031	-0.030	-0.050	-0.011	-0.036	0.043	0.042	0.165	-0.150	-0.034	0.073	0.067
26	0.029	0.022	0.065	0.026	-0.010	-0.011	-0.052	-0.027	0.153	-0.128	-0.054	0.056	0.079
27	0.092	0.180	0.166	-0.029	0.211	0.183	-0.074	0.088	0.299	-0.262	-0.091	0.044	-0.057
28	-0.153	-0.110	-0.158	-0.103	-0.026	-0.074	0.200	0.107	-0.138	0.119	0.019	-0.073	-0.149
29	-0.115	-0.021	-0.106	-0.209	0.079	-0.045	0.212	0.279	-0.026	0.023	0.012	-0.071	-0.210
30	0.278	0.752	0.470	0.239	0.421	0.222	-0.219	0.176	0.293	-0.250	-0.112	-0.235	-0.198
31	1.000	0.396	0.162	0.263	-0.102	0.006	-0.457	-0.344	0.149	-0.124	-0.050	0.468	0.448
32	0.396	1.000	0.454	0.375	0.311	0.206	-0.324	-0.063	0.199	-0.149	-0.109	-0.157	0.064
33	0.162	0.454	1.000	0.629	0.408	0.288	-0.526	-0.149	0.238	-0.162	-0.166	-0.374	0.123

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YBO72A	YBO72B	BBO68A	BBO68B
23	0.182	-0.022	-0.005	0.066	0.021	-0.002	0.068	0.021	0.048	0.022	0.025	0.006	0.047
24	-0.689	-0.044	0.025	0.015	0.014	0.034	0.021	0.005	-0.011	-0.065	-0.040	-0.023	0.001
25	-0.067	0.006	0.248	0.236	0.252	0.276	0.276	0.254	0.209	0.099	0.141	0.125	0.121
26	-0.081	0.020	0.298	0.243	0.387	0.341	0.265	0.404	0.226	0.088	0.113	0.127	0.124
27	0.052	0.047	0.191	0.202	0.247	0.195	0.216	0.268	0.336	0.166	0.213	0.239	0.259
28	0.150	-0.011	-0.158	-0.125	-0.151	-0.159	-0.155	-0.164	-0.158	-0.049	-0.045	-0.088	-0.124
29	0.210	0.002	-0.064	-0.014	-0.041	-0.052	-0.048	-0.034	-0.097	0.010	0.005	-0.062	-0.104
30	0.190	0.079	0.177	0.231	0.196	0.187	0.229	0.223	0.203	0.164	0.192	0.150	0.139
31	-0.452	0.026	0.080	0.081	0.066	0.088	0.078	0.076	0.074	0.018	0.040	0.029	0.039
32	-0.070	0.054	0.120	0.130	0.130	0.126	0.147	0.145	0.145	0.124	0.153	0.130	0.118
33	-0.130	0.064	0.146	0.189	0.184	0.150	0.221	0.169	0.237	0.133	0.149	0.173	0.194

TABLE A.5.2 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SOPHOMORES 4

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
34	MYB019B	-0.013	-0.033	-0.069	-0.048	-0.043	0.019	0.089	0.088	-0.001	-0.016	0.005	0.001	0.026	0.061
35	MYB019E	0.156	0.264	0.245	-0.142	0.089	-0.041	-0.020	-0.016	0.070	0.063	0.101	0.089	0.072	0.112
36	MYB019F	0.140	0.205	0.173	-0.115	0.118	0.028	-0.026	-0.021	0.083	0.090	0.097	0.114	0.106	0.121
37	MABSENT	-0.074	-0.036	-0.013	-0.005	-0.052	-0.060	-0.022	-0.006	-0.052	-0.014	-0.046	-0.021	-0.050	-0.137
38	MCUTCLS	0.156	0.216	0.235	-0.074	0.087	-0.034	-0.051	-0.014	-0.012	0.018	0.038	0.046	0.010	0.053
39	ACADEM	0.163	0.213	0.233	-0.088	0.114	0.005	-0.016	-0.034	0.128	0.085	0.108	0.138	0.095	0.247
40	GENERAL	-0.132	-0.168	-0.187	0.075	-0.084	0.008	0.017	0.010	-0.095	-0.033	-0.067	-0.085	-0.041	-0.171
41	VOCATNL	-0.076	-0.099	-0.105	0.029	-0.083	-0.012	-0.007	0.046	-0.070	-0.091	-0.078	-0.084	-0.090	-0.167
42	LGSIZE	-0.022	-0.107	-0.063	0.150	0.023	0.046	-0.017	-0.081	-0.002	0.024	0.012	0.010	-0.004	-0.008
43	SCHCATH	-0.037	-0.169	-0.146	0.163	-0.018	0.017	0.013	-0.023	-0.007	-0.006	0.013	-0.015	-0.022	0.018
44	SCHOPRIV	0.033	0.164	0.141	-0.162	0.014	-0.017	-0.012	0.023	0.005	0.005	-0.015	0.014	0.021	-0.020

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	HMWRK	BB016	BB059E	MBB053E
34	0.086	0.030	0.081	-0.214	0.056	0.143	0.038	0.091	-0.050	0.026	-0.029	-0.103	-0.209	0.239
35	0.125	-0.038	-0.092	-0.175	0.082	-0.196	0.373	-0.322	-0.011	-0.010	0.211	-0.026	0.079	0.421
36	0.145	-0.114	-0.035	-0.000	0.034	-0.021	-0.016	-0.162	-0.036	-0.011	0.183	-0.074	-0.045	0.222
37	-0.184	0.011	-0.000	0.071	-0.128	-0.132	0.225	-0.255	0.043	-0.052	-0.074	0.200	0.212	-0.219
38	0.014	0.022	-0.066	-0.036	0.045	-0.261	0.317	-0.343	0.042	-0.027	0.088	0.107	0.279	0.176
39	0.272	-0.009	0.005	0.047	0.041	-0.108	0.022	0.017	0.165	0.153	0.299	-0.138	-0.026	0.293
40	-0.167	0.009	-0.012	-0.059	-0.020	0.097	-0.018	-0.028	-0.150	-0.128	-0.262	0.119	0.023	-0.250
41	-0.218	0.002	0.011	0.051	-0.059	0.017	-0.016	0.042	-0.034	-0.054	-0.091	0.019	0.012	-0.112
42	-0.009	0.002	0.003	0.280	-0.281	0.231	-0.308	0.468	0.073	0.056	0.044	-0.073	-0.071	-0.235
43	0.064	0.057	0.084	0.046	-0.200	0.293	-0.179	0.692	0.067	0.079	-0.057	-0.149	-0.210	-0.198
44	-0.067	-0.056	-0.084	-0.044	0.197	-0.295	0.182	-0.689	-0.067	-0.081	0.052	0.150	0.210	0.190

OBS	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
34	0.263	0.375	0.629	1.000	0.144	0.084	-0.453	-0.580	0.057	-0.011	-0.103	-0.291	0.281
35	-0.102	0.311	0.408	0.144	1.000	0.430	-0.021	0.267	0.223	-0.171	-0.114	-0.582	-0.306
36	0.006	0.206	0.288	0.084	0.430	1.000	-0.200	0.006	0.184	-0.134	-0.104	-0.189	-0.075
37	-0.457	-0.324	-0.526	-0.453	-0.021	-0.200	1.000	0.495	-0.144	0.103	0.079	-0.205	-0.445
38	-0.344	-0.063	-0.149	-0.580	0.267	0.006	0.495	1.000	0.129	-0.123	-0.020	-0.190	-0.515
39	0.149	0.199	0.238	0.057	0.223	0.184	-0.144	0.129	1.000	-0.866	-0.298	-0.004	0.041
40	-0.124	-0.149	-0.162	-0.011	-0.171	-0.134	0.103	-0.123	-0.866	1.000	-0.175	-0.032	-0.045
41	-0.050	-0.109	-0.166	-0.103	-0.114	-0.104	0.079	-0.020	-0.298	-0.175	1.000	0.088	0.007
42	0.468	-0.157	-0.374	-0.291	-0.582	-0.189	-0.205	-0.190	-0.004	-0.032	0.088	1.000	0.462
43	0.448	0.064	0.123	0.281	-0.306	-0.075	-0.445	-0.515	0.041	-0.045	0.007	0.462	1.000
44	-0.452	-0.070	-0.130	-0.284	0.303	0.076	0.449	0.515	-0.045	0.049	-0.006	-0.460	-0.994

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YBO72A	YBO72B	BBO68A	BBO68B
34	-0.284	0.026	0.022	-0.019	-0.009	0.005	0.002	-0.017	0.077	-0.005	-0.000	0.022	0.068
35	0.303	0.042	0.119	0.227	0.141	0.117	0.218	0.135	0.171	0.155	0.162	0.144	0.154
36	0.076	-0.005	0.151	0.179	0.144	0.154	0.176	0.158	0.144	0.141	0.159	0.170	0.158
37	0.449	-0.024	-0.125	-0.098	-0.153	-0.123	-0.115	-0.140	-0.152	-0.041	-0.079	-0.106	-0.135
38	0.515	0.014	0.026	0.116	0.069	0.059	0.116	0.079	0.051	0.097	0.081	0.050	0.031
39	-0.045	0.038	0.246	0.292	0.289	0.269	0.328	0.300	0.364	0.243	0.272	0.299	0.295
40	0.049	-0.033	-0.182	-0.228	-0.206	-0.203	-0.235	-0.226	-0.279	-0.184	-0.198	-0.213	-0.216
41	-0.006	-0.013	-0.128	-0.133	-0.155	-0.122	-0.180	-0.137	-0.193	-0.122	-0.153	-0.178	-0.171
42	-0.460	-0.023	-0.003	-0.035	-0.007	0.017	-0.031	0.006	-0.012	-0.020	-0.004	-0.011	-0.034
43	-0.994	-0.070	-0.000	-0.052	-0.033	-0.008	-0.032	-0.061	0.030	-0.050	-0.011	0.030	0.054
44	1.000	-0.037	-0.004	0.046	0.027	0.002	0.026	0.055	-0.035	0.046	0.007	-0.033	-0.057

TABLE A.5.2 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SOPHOMORES 5

OBS	NAME	BB1O1	BBO4 2	BBO3 9	SIBS	BB1O3	BOTHPAR	BBO3 7B	BBO3 7C	BBO4 7G	BB1O4 C	BB1O4 D	BB1O4 G	BB1O4 I	FATEXP	MOTEXP	HISPAN	BLACK
45	SCHELITE	0.045	0.051	0.052	-0.017	0.035	-0.000	-0.012	0.003	0.015	0.012	0.014	0.017	0.016	0.023	0.024	-0.011	0.002
46	READBOTH	0.092	0.202	0.189	-0.088	0.111	0.071	-0.054	-0.093	0.091	0.103	0.144	0.170	0.163	0.183	0.201	-0.074	-0.036
47	VOCBOTH	0.184	0.226	0.282	-0.109	0.119	0.034	-0.067	-0.104	0.057	0.134	0.197	0.217	0.172	0.195	0.197	-0.084	-0.101
48	MATHBOTH	0.164	0.179	0.234	-0.067	0.157	0.041	-0.092	-0.153	0.052	0.092	0.156	0.179	0.146	0.224	0.242	-0.102	-0.100
49	TOTREAD	0.122	0.202	0.241	-0.085	0.142	0.079	-0.070	-0.101	0.102	0.120	0.151	0.215	0.165	0.199	0.216	-0.095	-0.049
50	TOTVOC	0.183	0.241	0.280	-0.131	0.108	0.031	-0.074	-0.110	0.088	0.166	0.209	0.255	0.210	0.215	0.240	-0.114	-0.098
51	TOTMATH	0.150	0.187	0.253	-0.057	0.169	0.053	-0.093	-0.151	0.037	0.095	0.155	0.179	0.157	0.227	0.228	-0.114	-0.111
52	EDPLANS	0.231	0.303	0.342	-0.135	0.139	0.046	0.001	-0.016	0.143	0.101	0.148	0.159	0.148	0.411	0.426	-0.027	0.070
53	YBO72A	0.200	0.256	0.278	-0.076	0.153	-0.023	-0.042	-0.010	0.077	0.047	0.119	0.132	0.096	0.254	0.241	-0.029	0.020

OBS	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO1 1C	BBO1 1D	HMWRK	BBO1 6	BBO5 9E	MBBOO 5E	MBBOO 3F	MBBOO 3G	MBBOY 1A	MYBO 1 9B	MYBO 1 9E	MYBO 1 9F	MABSENT
45	-0.017	0.024	0.013	-0.022	-0.044	0.006	0.020	0.047	-0.011	0.002	0.079	0.026	0.054	0.064	0.026	0.042	-0.005	-0.024
46	0.066	-0.022	-0.044	-0.005	0.025	0.248	0.298	0.191	-0.158	-0.064	0.177	0.080	0.120	0.146	0.022	0.119	0.151	-0.125
47	0.082	-0.064	-0.075	0.066	0.015	0.236	0.243	0.202	-0.125	-0.014	0.231	0.081	0.130	0.189	-0.019	0.227	0.179	-0.098
48	0.062	-0.013	-0.068	0.021	0.014	0.252	0.387	0.247	-0.151	-0.041	0.196	0.066	0.130	0.184	-0.009	0.141	0.144	-0.153
49	0.087	-0.033	-0.058	-0.002	0.034	0.276	0.341	0.195	-0.159	-0.052	0.187	0.088	0.126	0.150	0.005	0.117	0.154	-0.123
50	0.081	-0.057	-0.082	0.068	0.021	0.276	0.265	0.216	-0.155	-0.048	0.229	0.078	0.147	0.221	0.002	0.218	0.176	-0.115
51	0.074	-0.036	-0.059	0.021	0.005	0.254	0.404	0.268	-0.164	-0.034	0.223	0.076	0.145	0.169	-0.017	0.135	0.158	-0.140
52	0.058	0.010	-0.110	0.048	-0.011	0.209	0.226	0.336	-0.158	-0.097	0.203	0.074	0.145	0.237	0.077	0.171	0.144	-0.152
53	0.043	0.030	-0.094	0.022	-0.065	0.099	0.088	0.166	-0.049	0.010	0.164	0.018	0.124	0.133	-0.005	0.155	0.141	-0.041

OBS	MCUTCLASS	ACADEM	GENERAL	VOCATN	LGSIZE	SCHCAT	SCHOPRIV	SCHLITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YBO72A	YBO76A	BBO7 6H	BBO8 8A	BBO8 8B
45	0.014	0.038	-0.033	-0.013	-0.023	-0.070	-0.037	1.000	0.044	0.053	0.053	0.054	0.056	0.061	0.043	0.034	0.034	0.028	0.025
46	0.026	0.246	-0.182	-0.128	-0.003	-0.000	-0.004	0.044	1.000	0.533	0.548	0.877	0.605	0.577	0.334	0.200	0.222	0.235	0.217
47	0.116	0.292	-0.228	-0.133	-0.035	-0.052	0.046	0.053	0.533	1.000	0.483	0.612	0.882	0.515	0.335	0.236	0.252	0.271	0.273
48	0.069	0.289	-0.206	-0.155	-0.007	-0.033	0.027	0.053	0.548	0.483	1.000	0.620	0.559	0.937	0.355	0.255	0.275	0.273	0.256
49	0.059	0.269	-0.203	-0.122	0.017	-0.008	0.002	0.054	0.877	0.612	0.620	1.000	0.697	0.650	0.367	0.226	0.242	0.250	0.243
50	0.116	0.328	-0.235	-0.180	-0.031	-0.032	0.026	0.056	0.605	0.882	0.559	0.697	1.000	0.585	0.381	0.251	0.278	0.297	0.296
51	0.079	0.300	-0.226	-0.137	0.006	-0.061	0.055	0.061	0.577	0.515	0.937	0.650	0.585	1.000	0.368	0.256	0.275	0.275	0.253
52	0.051	0.364	-0.279	-0.193	-0.012	0.030	-0.035	0.043	0.334	0.335	0.355	0.367	0.381	0.368	1.000	0.332	0.404	0.478	0.564
53	0.097	0.243	-0.184	-0.122	-0.020	-0.050	0.046	0.034	0.200	0.236	0.255	0.226	0.251	0.256	0.332	1.000	0.834	0.564	0.325

TABLE A.5.2 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SOPHOMORES 6

OBS	NAME	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP	MOTEXP	HISPAN	BLACK	REGION1
54	YB072B	0.203	0.254	0.297	-0.096	0.170	0.009	-0.037	0.009	0.105	0.066	0.121	0.146	0.130	0.297	0.291	-0.030	0.023	0.048
55	BB068A	0.206	0.226	0.256	-0.100	0.151	0.033	-0.010	-0.000	0.111	0.088	0.140	0.112	0.129	0.358	0.368	-0.042	0.033	0.037
56	BB068B	0.169	0.199	0.219	-0.111	0.108	0.039	0.003	0.009	0.132	0.086	0.125	0.135	0.129	0.393	0.422	-0.022	0.060	0.004

OBS	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	HMWRK	BB016	BB059E	MBB053E	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS
54	0.026	-0.096	0.025	-0.040	0.141	0.113	0.213	-0.045	0.005	0.192	0.040	0.153	0.149	-0.000	0.162	0.159	-0.079	0.081
55	0.029	-0.073	0.006	-0.023	0.125	0.127	0.239	-0.088	-0.062	0.150	0.029	0.130	0.173	0.022	0.144	0.170	-0.106	0.050
56	0.025	-0.067	0.047	0.001	0.121	0.124	0.259	-0.124	-0.104	0.139	0.039	0.118	0.194	0.068	0.154	0.158	-0.135	0.031

OBS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	YB072A	YB072B	BB068A	BB068B
54	0.272	-0.198	-0.153	-0.004	-0.011	0.007	0.034	0.222	0.252	0.275	0.242	0.278	0.275	0.404	0.834	1.000	0.681	0.405
55	0.299	-0.213	-0.178	-0.011	0.030	-0.033	0.028	0.235	0.271	0.273	0.250	0.297	0.275	0.478	0.564	0.681	1.000	0.630
56	0.295	-0.216	-0.171	-0.034	0.054	-0.057	0.025	0.217	0.273	0.256	0.243	0.296	0.253	0.564	0.325	0.405	0.630	1.000

TABLE A.5.3

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SENIORS 1

OBS	NAME	BB101	BBO42	BBO39	SIBS	BB103	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO47C	BB104D	BBO44G	BB101	FATEXP	MOTEXP	HISPAN
1	MEAN	4.265	4.176	4.652	3.065	6.948	0.778	1.928	1.673	2.385	0.816	0.704	0.785	0.769	0.537	0.618	0.062
2	STDEV	1.770	2.184	2.591	2.033	1.872	0.415	0.883	0.868	1.122	0.388	0.457	0.411	0.421	0.499	0.486	0.240
3	BB101	1.000	0.284	0.379	-0.138	0.345	0.306	-0.109	-0.124	0.092	0.145	0.195	0.183	0.208	0.283	0.182	-0.100
4	BBO42	0.284	1.000	0.528	-0.116	0.210	0.006	0.053	0.031	0.095	0.091	0.163	0.159	0.110	0.248	0.252	-0.098
5	BBO39	0.379	0.528	1.000	-0.137	0.257	0.025	-0.098	-0.094	0.118	0.093	0.175	0.183	0.141	0.338	0.280	-0.100
6	SIBS	-0.138	-0.116	-0.137	1.000	0.048	-0.049	-0.037	-0.017	-0.092	-0.034	-0.087	-0.048	-0.133	-0.130	-0.102	0.064
7	BB103	0.345	0.210	0.257	0.048	1.000	0.214	-0.121	-0.115	0.071	0.173	0.188	0.205	0.154	0.162	0.108	-0.124
8	BOTHPAR	0.306	0.006	0.025	-0.049	0.214	1.000	-0.150	-0.152	0.043	0.146	0.169	0.135	0.160	0.205	0.075	-0.034
9	BBO37B	-0.109	0.053	-0.098	-0.037	-0.121	-0.150	1.000	0.614	-0.033	-0.038	-0.083	-0.059	-0.064	-0.061	0.002	0.010

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO11C	BBO11D	ADVMTH	HMWRK	BBO16	BBO59E	MBBO53E	MBBO53F	MBBO53G	MBBO19A	MYBO19B	MYBO19E
1	0.120	0.216	0.311	0.289	0.184	0.283	0.256	0.217	2.049	3.523	2.532	0.447	2.492	2.347	2.216	1.632	1.450	1.943
2	0.325	0.412	0.463	0.453	0.388	0.450	0.437	0.412	1.538	3.246	1.340	0.497	0.217	0.228	0.216	0.207	0.291	0.247
3	-0.234	0.038	-0.144	0.074	0.046	0.062	0.109	0.089	0.249	0.077	0.008	0.098	0.070	0.016	0.030	0.033	-0.090	0.105
4	-0.043	0.013	-0.071	-0.006	0.078	-0.046	0.149	0.114	0.281	0.148	-0.022	0.036	0.083	0.005	0.063	0.039	-0.083	0.122
5	-0.105	0.034	-0.072	-0.034	0.090	-0.014	0.157	0.126	0.346	0.186	-0.033	0.043	0.116	0.011	0.088	0.022	-0.141	0.136
6	0.149	-0.022	-0.011	0.027	0.006	0.122	-0.050	-0.037	-0.137	-0.038	0.046	-0.000	-0.007	-0.013	-0.011	0.002	0.026	-0.025
7	-0.111	0.087	-0.115	0.131	-0.109	0.056	0.081	0.074	0.171	0.078	-0.025	0.030	0.052	0.043	-0.018	0.068	0.011	0.060
8	-0.212	0.013	-0.074	0.072	-0.008	0.056	0.033	0.048	0.109	0.034	-0.082	-0.017	0.013	0.025	-0.009	0.034	0.032	0.031
9	0.200	-0.047	0.104	-0.048	-0.018	-0.090	-0.010	-0.021	-0.075	-0.017	0.038	0.021	-0.017	0.001	0.006	-0.005	0.015	-0.044

OBS	MYBO19F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCANL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BBO68A	BBO68B	EBO68C	EBO68D
1	2.757	2.390	0.366	0.339	0.383	0.261	7.010	4.476	4.483	10.634	10.752	12.855	19.006	2.410	0.468	0.506	0.559	0.616
2	0.174	0.326	0.153	0.473	0.486	0.439	0.740	2.097	1.967	4.242	4.224	5.289	6.255	1.020	0.499	0.500	0.497	0.486
3	0.137	-0.019	0.100	0.173	-0.054	-0.120	0.104	0.194	0.243	0.257	0.217	0.228	0.263	0.227	0.196	0.189	0.174	0.150
4	0.102	0.011	0.112	0.234	-0.073	-0.169	0.089	0.199	0.253	0.242	0.230	0.262	0.253	0.341	0.290	0.279	0.266	0.239
5	0.127	-0.000	0.146	0.272	-0.088	-0.198	0.168	0.245	0.300	0.305	0.272	0.307	0.316	0.397	0.321	0.315	0.299	0.277
6	-0.046	0.018	-0.031	-0.118	0.052	0.064	-0.057	-0.130	-0.164	-0.122	-0.144	-0.169	-0.118	-0.125	-0.113	-0.112	-0.107	-0.096
7	0.102	-0.074	-0.015	0.120	-0.048	-0.073	-0.029	0.149	0.162	0.184	0.161	0.160	0.190	0.158	0.143	0.136	0.123	0.106
8	0.110	-0.050	-0.021	0.076	-0.021	-0.043	-0.035	0.119	0.107	0.142	0.124	0.104	0.141	0.047	0.029	0.028	0.034	0.030
9	-0.070	-0.006	-0.030	-0.044	0.032	0.006	-0.013	-0.096	-0.093	-0.109	-0.096	-0.098	-0.115	-0.015	-0.005	-0.005	0.004	0.009

TABLE A.5.3 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SENIORS

OBS	NAME	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB03B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP	MOTEXP	HISPAN
10	BB037C	-0.124	0.031	-0.094	-0.017	-0.115	-0.152	0.614	1.000	-0.049	-0.055	-0.096	-0.071	-0.080	-0.083	-0.014	0.014
11	BB047G	0.092	0.095	0.118	-0.092	0.071	0.043	-0.033	-0.049	1.000	0.071	0.082	0.096	0.092	0.148	0.155	-0.022
12	BB104C	0.145	0.091	0.093	-0.034	0.173	0.146	-0.038	-0.055	0.071	1.000	0.413	0.508	0.409	0.155	0.143	-0.066
13	BB104D	0.195	0.163	0.175	-0.087	0.188	0.169	-0.083	-0.096	0.082	0.413	1.000	0.396	0.403	0.184	0.163	-0.053
14	BB104G	0.183	0.159	0.183	-0.048	0.205	0.135	-0.059	-0.071	0.096	0.508	0.396	1.000	0.429	0.177	0.171	-0.100
15	BB104I	0.208	0.110	0.141	-0.133	0.154	0.160	-0.064	-0.080	0.092	0.409	0.403	0.429	1.000	0.189	0.173	-0.080
16	FATEXP	0.283	0.248	0.338	-0.130	0.162	0.205	-0.061	-0.083	0.148	0.155	0.184	0.177	0.189	1.000	0.695	-0.031
17	MOTEXP	0.182	0.252	0.280	-0.102	0.108	0.075	0.002	-0.014	0.155	0.143	0.163	0.171	0.173	0.695	1.000	-0.026
18	HISPAN	-0.100	-0.098	-0.100	0.064	-0.124	-0.034	0.010	0.014	-0.022	-0.066	-0.053	-0.100	-0.080	-0.031	-0.026	1.000

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO1C	BBO1D	ADVMTH	HMWRK	BBO16	BBO5E	MBBO5E	MBBO5F	MBBO5G	MYBO19A	MYBO19B	MYBO19E
10	0.241	-0.057	0.144	-0.077	-0.021	-0.110	-0.021	-0.029	-0.101	-0.023	0.037	0.004	-0.017	0.008	0.008	-0.012	0.024	-0.051
11	-0.059	-0.001	-0.031	0.006	0.031	0.004	0.114	0.057	0.126	0.171	-0.034	-0.054	0.033	0.016	0.032	0.012	-0.015	0.037
12	-0.092	0.040	-0.033	0.008	-0.013	0.083	0.073	0.050	0.165	0.073	-0.046	0.043	0.026	0.030	0.001	0.028	0.009	0.035
13	-0.156	0.073	-0.133	0.038	0.036	0.102	0.100	0.087	0.215	0.109	-0.073	0.027	0.024	-0.004	-0.004	0.009	-0.041	0.050
14	-0.130	0.053	-0.095	0.022	0.032	0.060	0.102	0.065	0.206	0.110	-0.047	0.054	0.031	0.010	0.012	0.035	-0.019	0.061
15	-0.198	0.044	-0.105	0.051	0.019	0.089	0.102	0.095	0.241	0.110	-0.054	0.032	0.022	0.014	-0.003	0.037	0.001	0.063
16	-0.071	0.026	-0.032	-0.032	0.048	0.037	0.198	0.172	0.414	0.229	-0.105	-0.017	0.058	-0.001	0.052	0.013	-0.086	0.065
17	0.008	0.032	-0.008	-0.053	0.038	0.025	0.205	0.168	0.410	0.239	-0.108	-0.016	0.052	-0.008	0.049	0.009	-0.086	0.048
18	-0.095	-0.049	0.048	-0.089	0.099	0.171	-0.021	-0.030	-0.091	-0.038	0.022	0.001	0.010	-0.019	0.029	-0.054	-0.029	-0.019

OBS	MYBO19F	MABSENT	MCUTCLS	ACADEAM	GENCRAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOCAB	TOTMATH	EDPLANS	BBO66A	BBO66B	EBO66C	EBO66D
10	-0.095	0.003	-0.039	-0.050	0.028	0.017	-0.022	-0.127	-0.132	-0.146	-0.132	-0.132	-0.150	-0.027	-0.025	-0.016	-0.010	-0.005
11	0.034	-0.004	0.023	0.135	-0.081	-0.056	0.025	0.126	0.130	0.107	0.134	0.127	0.107	0.169	0.136	0.147	0.151	0.155
12	0.079	-0.043	0.005	0.115	-0.033	-0.068	0.005	0.159	0.172	0.169	0.188	0.164	0.171	0.126	0.094	0.094	0.105	0.098
13	0.078	-0.003	0.060	0.158	-0.063	-0.082	0.055	0.180	0.215	0.220	0.199	0.208	0.224	0.173	0.135	0.138	0.135	0.126
14	0.095	-0.018	0.049	0.159	-0.044	-0.105	0.023	0.220	0.235	0.228	0.254	0.234	0.229	0.184	0.149	0.156	0.151	0.142
15	0.109	-0.041	0.025	0.163	-0.053	-0.097	0.007	0.227	0.244	0.265	0.258	0.239	0.272	0.182	0.137	0.143	0.151	0.142
16	0.060	-0.013	0.088	0.350	-0.122	-0.228	0.105	0.266	0.288	0.335	0.300	0.285	0.347	0.503	0.372	0.402	0.457	0.486
17	0.022	-0.006	0.078	0.353	-0.117	-0.234	0.109	0.256	0.272	0.318	0.287	0.271	0.333	0.525	0.369	0.404	0.466	0.513
18	-0.036	0.063	0.026	-0.063	0.017	0.042	0.054	-0.147	-0.130	-0.140	-0.161	-0.134	-0.143	-0.054	-0.030	-0.031	-0.035	-0.020

TABLE A.5.3 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SENIORS 3

OBS	NAME	BBO1	BBO42	BBO39	SIBSS	BBO13	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO1C	BBO1D	BBO4G	BBO4I	FATEXP	MOTEXP	HISPAN
19	BLACK	-0.234	-0.043	-0.105	0.149	-0.111	-0.212	0.200	0.241	-0.059	-0.092	-0.156	-0.130	-0.198	-0.071	0.008	-0.095
20	REGION1	0.038	0.013	0.034	-0.022	0.087	0.013	-0.047	-0.057	-0.001	0.040	0.073	0.053	0.044	0.026	0.032	-0.049
21	REGION2	-0.144	-0.071	-0.072	-0.011	-0.115	-0.074	0.104	0.144	-0.031	-0.033	-0.133	-0.095	-0.105	-0.032	-0.008	0.048
22	REGION3	0.074	-0.006	-0.034	0.027	0.131	0.072	-0.048	-0.077	0.006	0.008	0.038	0.022	0.051	-0.032	-0.053	-0.089
23	REGION4	0.046	0.078	0.090	0.006	-0.109	-0.008	-0.018	-0.021	0.031	-0.013	0.036	0.032	0.019	0.048	0.038	0.099
24	RELCATH	0.062	-0.046	-0.014	0.122	0.056	0.056	-0.090	-0.110	0.004	0.083	0.102	0.060	0.089	0.037	0.025	0.171
25	BBO11C	0.109	0.149	0.157	-0.050	0.081	0.033	-0.010	-0.021	0.114	0.073	0.100	0.102	0.102	0.198	0.205	-0.021
26	BBO11D	0.089	0.114	0.126	-0.037	0.074	0.048	-0.021	-0.029	0.057	0.050	0.087	0.065	0.095	0.172	0.168	-0.030
27	ADVMTH	0.249	0.281	0.346	-0.137	0.171	0.109	-0.075	-0.101	0.126	0.165	0.215	0.206	0.241	0.414	0.410	-0.091

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BBO11C	BBO11D	ADVMTH	HMWR	BBO16	BBO5E	MBBO53E	MBBO53F	MBBO53G	MYBO19A	MYBO19B	MYBO19E
19	1.000	-0.026	0.220	-0.104	-0.114	-0.178	-0.013	-0.025	-0.110	0.013	-0.026	-0.055	-0.029	-0.021	-0.003	-0.022	-0.046	-0.113
20	-0.026	1.000	-0.353	-0.334	-0.250	0.198	-0.004	0.013	0.122	0.058	-0.000	0.011	-0.028	-0.103	-0.086	-0.047	-0.116	-0.131
21	0.220	-0.353	1.000	-0.428	-0.319	-0.211	-0.015	-0.021	-0.100	-0.054	-0.050	-0.080	0.007	0.241	0.093	-0.012	0.154	-0.098
22	-0.104	-0.334	-0.428	1.000	-0.303	0.028	-0.009	0.018	0.011	0.015	-0.030	-0.026	-0.063	-0.033	-0.161	0.122	0.094	0.057
23	-0.114	-0.250	-0.319	-0.303	1.000	0.009	0.032	-0.009	-0.023	-0.014	0.095	0.115	0.095	-0.140	0.168	-0.079	-0.170	0.190
24	-0.178	0.198	-0.211	0.028	0.009	1.000	-0.000	0.005	0.067	0.020	0.019	0.048	-0.014	-0.054	-0.040	-0.018	-0.076	0.009
25	-0.013	-0.004	-0.015	-0.009	0.032	-0.000	1.000	0.461	0.313	0.222	-0.066	-0.037	0.026	-0.011	0.016	-0.012	-0.044	0.000
26	-0.025	0.013	-0.021	0.018	-0.009	0.005	0.461	1.000	0.434	0.200	-0.087	-0.056	0.016	-0.005	0.005	0.021	-0.013	0.015
27	-0.110	0.122	-0.100	0.011	-0.023	0.067	0.313	0.434	1.000	0.347	-0.155	-0.049	0.071	-0.006	0.035	0.038	-0.087	0.070

OBS	MYBO19F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTTREAD	TOTVOC	TOTMATH	EDPLANS	BBO8A	BBO86	BBO8C	EBO8D
19	-0.289	0.007	-0.017	-0.027	-0.022	0.051	0.080	-0.224	-0.244	-0.254	-0.241	-0.237	-0.251	0.036	-0.003	0.005	0.033	0.039
20	-0.189	-0.001	0.053	0.131	-0.140	0.008	0.090	0.068	0.112	0.087	0.071	0.105	0.093	0.035	0.038	0.033	0.027	0.019
21	-0.044	-0.150	-0.242	-0.071	0.022	0.050	-0.053	-0.134	-0.168	-0.168	-0.134	-0.160	-0.175	-0.034	-0.020	-0.014	-0.012	-0.018
22	0.079	-0.147	-0.095	-0.016	0.034	-0.013	-0.150	0.064	0.030	0.073	0.056	0.041	0.081	-0.034	-0.045	-0.048	-0.048	-0.045
23	0.162	0.354	0.341	-0.036	0.083	-0.053	0.143	0.013	0.047	0.023	0.019	0.031	0.016	0.043	0.036	0.039	0.042	0.054
24	0.012	0.029	0.073	0.030	-0.033	0.005	0.085	0.025	0.050	0.060	0.026	0.030	0.062	0.002	-0.002	0.002	-0.001	0.001
25	-0.009	0.009	0.036	0.296	-0.149	-0.145	0.067	0.242	0.261	0.266	0.271	0.275	0.269	0.293	0.231	0.243	0.244	0.224
26	0.010	-0.032	-0.003	0.283	-0.154	-0.125	0.016	0.219	0.200	0.357	0.236	0.207	0.376	0.259	0.202	0.215	0.221	0.196
27	0.051	-0.041	0.073	0.524	-0.234	-0.285	0.112	0.466	0.459	0.677	0.506	0.464	0.698	0.543	0.421	0.452	0.474	0.434

TABLE A.5.3 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SENIORS

OBS	NAME	BB101	BBO402	BBO039	SIBS	BB103	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO40C	BB104D	BBO04G	BBO04I	FATEXP	MOTEXP	HISPAN
28	HMWRK	0.077	0.148	0.186	-0.038	0.078	0.034	-0.017	-0.023	0.171	0.073	0.109	0.110	0.110	0.229	0.239	-0.038
29	BBO16	0.008	-0.022	-0.033	0.046	-0.025	-0.082	0.038	0.037	-0.034	-0.046	-0.073	-0.047	-0.054	-0.105	-0.108	0.022
30	BBO59E	0.098	0.036	0.043	-0.000	0.030	-0.017	0.021	0.004	-0.054	0.043	0.027	0.054	0.032	-0.017	-0.016	0.001
31	MBBO53E	0.070	0.083	0.116	-0.007	0.052	0.013	-0.017	-0.017	0.033	0.026	0.024	0.031	0.022	0.058	0.052	0.010
32	MBBO53F	0.016	0.005	0.011	-0.013	0.043	0.025	0.001	0.008	0.016	0.030	-0.004	0.010	0.014	-0.001	-0.008	-0.019
33	MBBO53G	0.030	0.063	0.088	-0.011	-0.018	-0.009	0.006	0.008	0.032	0.001	-0.004	0.012	-0.003	0.052	0.049	0.029
34	MYBO19A	0.033	0.039	0.022	0.002	0.068	0.034	-0.005	-0.012	0.012	0.028	0.009	0.035	0.037	0.013	0.009	-0.054
35	MYBO19B	-0.090	-0.083	-0.141	0.026	0.011	0.032	0.015	0.024	-0.015	0.009	-0.041	-0.019	0.001	-0.086	-0.086	-0.029
36	MYBO19E	0.105	0.122	0.136	-0.025	0.060	0.031	-0.044	-0.051	0.037	0.035	0.050	0.061	0.063	0.065	0.048	-0.019

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RECAT	BBO1C	BBO1D	ADMTH	HMWRK	BBO5G	BBO5E	MBBO5E	MBBO5F	MBBO5G	MYBO1A	MYBO1B	MYBO1E
28	0.013	0.058	-0.054	0.015	-0.014	0.020	0.222	0.200	0.347	1.000	-0.164	-0.176	0.068	0.029	0.044	0.050	-0.039	0.058
29	-0.026	-0.000	-0.050	-0.030	0.095	0.019	-0.066	-0.087	-0.155	-0.164	1.000	0.310	-0.020	-0.078	-0.014	-0.047	-0.052	0.009
30	-0.055	0.011	-0.080	-0.026	0.115	0.048	-0.037	-0.056	-0.049	-0.176	0.310	1.000	-0.004	-0.127	0.005	-0.072	-0.194	0.018
31	-0.029	-0.028	0.007	-0.063	0.095	-0.014	0.026	0.016	0.071	0.068	-0.020	-0.004	1.000	0.515	0.667	0.252	0.091	0.348
32	-0.021	-0.103	0.241	-0.033	-0.140	-0.054	-0.011	-0.005	-0.006	0.029	-0.078	-0.127	0.515	1.000	0.482	0.287	0.362	0.223
33	-0.003	-0.086	0.093	-0.161	0.168	-0.040	0.016	0.005	0.035	0.044	-0.014	0.005	0.667	0.482	1.000	0.186	0.027	0.348
34	-0.022	-0.047	-0.012	0.122	-0.079	-0.018	-0.012	0.021	0.038	0.050	-0.047	-0.072	0.252	0.287	0.186	1.000	0.576	0.416
35	-0.046	-0.116	0.154	0.094	-0.170	-0.076	-0.044	-0.013	-0.087	-0.039	-0.052	-0.194	0.091	0.362	0.027	0.576	1.000	0.242
36	-0.113	-0.131	-0.098	0.057	0.190	0.009	0.000	0.015	0.070	0.058	0.009	0.018	0.348	0.223	0.348	0.416	0.242	1.000

OBS	MYBO19F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCANL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTTRAD	TOTTVOC	TODTMTH	EDPLANS	BBO68A	BBO68B	EBO68C	EBO68D
28	0.025	-0.049	0.012	0.325	-0.182	-0.143	0.061	0.208	0.197	0.263	0.216	0.204	0.281	0.359	0.231	0.253	0.289	0.291
29	-0.010	0.173	0.123	-0.130	0.105	0.020	0.002	-0.080	-0.065	-0.122	-0.081	-0.064	-0.129	-0.130	-0.055	-0.070	-0.102	-0.120
30	-0.002	0.150	0.287	-0.074	0.085	-0.014	0.110	-0.019	0.016	-0.032	-0.007	0.006	-0.041	-0.053	0.000	-0.024	-0.057	-0.066
31	0.315	-0.104	-0.030	0.058	-0.037	-0.025	-0.009	0.065	0.069	0.066	0.069	0.067	0.068	0.069	0.052	0.050	0.056	0.046
32	0.288	-0.279	-0.414	0.025	-0.051	0.030	-0.043	0.018	0.003	0.015	0.025	0.004	0.015	-0.014	-0.004	-0.008	-0.009	-0.016
33	0.287	-0.066	-0.010	0.031	-0.008	-0.027	0.083	0.024	0.034	0.021	0.030	0.030	0.024	0.058	0.052	0.052	0.051	0.042
34	0.339	-0.261	-0.281	0.012	0.026	-0.041	-0.358	0.060	0.038	0.064	0.058	0.043	0.067	0.015	0.006	0.004	0.009	0.007
35	0.245	-0.230	-0.612	-0.075	0.049	0.029	-0.592	-0.012	-0.063	-0.045	-0.019	-0.061	-0.048	-0.118	-0.090	-0.095	-0.092	-0.088
36	0.555	-0.047	-0.006	0.040	0.023	-0.068	-0.143	0.086	0.105	0.117	0.095	0.110	0.121	0.076	0.050	0.049	0.056	0.048

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SENIORS 5

OBS	NAME	BBO1O1	BBO42	BBO39	SIBS	BBO13	BOTHPAR	BBO37B	BBO37C	BBO47G	BBO14C	BBO14D	BBO14G	BBO14I	FATEXP	MOTEXP	HISPAN
37	MYBO19F	0.137	0.102	0.127	-0.046	0.102	0.110	-0.070	-0.095	0.034	0.079	0.078	0.095	0.109	0.060	0.022	-0.036
38	MABSENT	-0.019	0.011	-0.000	0.018	-0.074	-0.050	-0.006	0.003	-0.004	-0.043	-0.003	-0.018	-0.041	-0.013	-0.006	0.063
39	MCUTCLS	0.100	0.112	0.146	-0.031	-0.015	-0.021	-0.030	-0.039	0.023	0.005	0.060	0.049	0.025	0.088	0.078	0.026
40	ACADEM	0.173	0.234	0.272	-0.118	0.120	0.076	-0.044	-0.050	0.135	0.115	0.158	0.159	0.163	0.350	0.353	-0.063
41	GENERAL	-0.054	-0.073	-0.088	0.052	-0.048	-0.021	0.032	0.028	-0.081	-0.033	-0.063	-0.044	-0.053	-0.122	-0.117	0.017
42	VOCATNL	-0.120	-0.169	-0.198	0.064	-0.073	-0.043	0.006	0.017	-0.056	-0.068	-0.082	-0.105	-0.097	-0.228	-0.234	0.042
43	LGSIZE	0.104	0.089	0.168	-0.057	-0.029	-0.035	-0.013	-0.022	0.025	0.005	0.055	0.023	0.007	0.105	0.109	0.054
44	READBOTH	0.194	0.199	0.245	-0.130	0.149	0.119	-0.096	-0.127	0.126	0.159	0.180	0.220	0.227	0.266	0.256	-0.147
45	VOCBOTH	0.243	0.253	0.300	-0.164	0.162	0.107	-0.093	-0.132	0.130	0.172	0.215	0.235	0.244	0.288	0.272	-0.130

OBS	BLACK	REGION1	REGION2	REGION3	REGION4	RELATH	BBO11C	BBO11D	ADMTH	HMWRK	BBO16	BBO59E	MBBO53E	MBBO53F	MBBO53G	MYBO19A	MYBO19B	MYBO19E
37	-0.289	-0.189	-0.044	0.079	0.162	0.012	-0.009	0.010	0.051	0.025	-0.010	-0.002	0.315	0.288	0.287	0.339	0.245	0.555
38	0.007	-0.001	-0.150	-0.147	0.354	0.029	0.009	-0.032	-0.041	-0.049	0.173	0.150	-0.104	-0.279	-0.066	-0.261	-0.230	-0.047
39	-0.017	0.053	-0.242	-0.095	0.341	0.073	0.036	-0.003	0.073	0.012	0.123	0.287	-0.030	-0.414	-0.010	-0.281	-0.612	-0.006
40	-0.027	0.131	-0.071	-0.016	-0.036	0.030	0.296	0.283	0.524	0.325	-0.130	-0.074	0.058	0.025	0.031	0.012	-0.075	0.040
41	-0.022	-0.140	0.022	0.034	0.083	-0.033	-0.149	-0.154	-0.234	-0.182	0.105	0.085	-0.037	-0.051	-0.008	0.026	0.049	0.023
42	0.051	0.008	0.050	-0.013	-0.053	0.005	-0.145	-0.125	-0.285	-0.143	0.020	-0.014	-0.025	0.030	-0.027	-0.041	0.029	-0.068
43	0.080	0.090	-0.053	-0.150	0.143	0.085	0.067	0.016	0.112	0.061	0.002	0.110	-0.009	-0.043	0.083	-0.358	-0.592	-0.143
44	-0.224	0.068	-0.134	0.064	0.013	0.025	0.242	0.219	0.466	0.208	-0.080	-0.019	0.065	0.018	0.024	0.060	-0.012	0.086
45	-0.244	0.112	-0.168	0.030	0.047	0.050	0.261	0.200	0.459	0.197	-0.065	0.016	0.069	0.003	0.034	0.038	-0.063	0.105

OBS	MYBO19F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BBO66A	BBO68B	EBO6C	EBO6D
37	1.000	-0.143	-0.085	0.029	0.040	-0.068	-0.186	0.133	0.137	0.153	0.151	0.144	0.153	0.027	0.028	0.019	0.014	0.002
38	-0.143	1.000	0.521	-0.054	0.050	0.001	0.058	-0.054	-0.030	-0.057	-0.052	-0.027	-0.062	-0.005	-0.003	-0.001	-0.001	0.011
39	-0.085	0.521	1.000	0.034	0.014	-0.055	0.351	0.029	0.077	0.047	0.033	0.075	0.050	0.108	0.081	0.085	0.074	0.074
40	0.029	-0.054	0.034	1.000	-0.564	-0.425	0.106	0.333	0.358	0.427	0.363	0.373	0.446	0.486	0.358	0.377	0.406	0.387
41	0.040	0.050	0.014	-0.564	1.000	-0.468	-0.124	-0.143	-0.146	-0.184	-0.150	-0.156	-0.196	-0.197	-0.136	-0.143	-0.156	-0.161
42	-0.068	0.001	-0.055	-0.425	-0.468	1.000	0.016	-0.186	-0.210	-0.244	-0.210	-0.216	-0.251	-0.297	-0.228	-0.237	-0.257	-0.230
43	-0.186	0.058	0.351	0.106	-0.124	0.016	1.000	0.022	0.066	0.056	0.031	0.057	0.061	0.144	0.103	0.112	0.109	0.104
44	0.133	-0.054	0.029	0.333	-0.143	-0.186	0.022	1.000	0.571	0.596	0.887	0.609	0.601	0.356	0.262	0.277	0.272	0.249
45	0.137	-0.030	0.077	0.358	-0.146	-0.210	0.066	0.571	1.000	0.560	0.649	0.851	0.567	0.373	0.300	0.302	0.294	0.259

TABLE A.5.3 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PUBLIC SENIORS

OBS	NAME	BB10	BB04	BB39	SIBS	BB13	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	BFATEXP	BMOTEXP	HISPAN	BLACK
46	MATHBOTH	0.257	0.242	0.305	-0.122	0.184	0.142	-0.109	-0.146	0.107	0.169	0.220	0.228	0.265	0.335	0.318	-0.140	-0.254
47	TOTREAD	0.217	0.230	0.272	-0.144	0.161	0.124	-0.096	-0.132	0.134	0.188	0.199	0.254	0.258	0.300	0.287	-0.161	-0.241
48	TOTVOC	0.228	0.262	0.307	-0.169	0.160	0.104	-0.098	-0.132	0.127	0.164	0.208	0.234	0.239	0.285	0.271	-0.134	-0.237
49	TOTMATH	0.263	0.253	0.316	-0.118	0.190	0.141	-0.115	-0.150	0.107	0.171	0.224	0.229	0.272	0.347	0.333	-0.143	-0.251
50	EDPLANS	0.227	0.341	0.397	-0.125	0.158	0.047	-0.015	-0.027	0.169	0.126	0.173	0.184	0.182	0.503	0.525	-0.054	0.036
51	BB068A	0.196	0.290	0.321	-0.113	0.143	0.029	-0.005	-0.025	0.136	0.094	0.135	0.149	0.137	0.372	0.369	-0.030	-0.003
52	BB068B	0.189	0.279	0.315	-0.112	0.136	0.028	-0.005	-0.016	0.147	0.094	0.138	0.156	0.143	0.402	0.404	-0.031	0.005
53	EB068C	0.174	0.266	0.299	-0.107	0.123	0.034	0.004	-0.010	0.151	0.105	0.135	0.151	0.151	0.457	0.466	-0.035	0.033
54	EB068D	0.150	0.239	0.277	-0.096	0.106	0.030	0.009	-0.005	0.155	0.098	0.126	0.142	0.142	0.486	0.513	-0.020	0.039

OBS	REGION1	REGION2	REGION3	REGION4	RELCATH	BB01C	BB01D	ADVMATH	HMWRK	BB016	BB059E	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F
46	0.087	-0.168	0.073	0.023	0.060	0.266	0.357	0.677	0.263	-0.122	-0.032	0.066	0.015	0.021	0.064	-0.045	0.117	0.153
47	0.071	-0.134	0.056	0.019	0.026	0.271	0.236	0.506	0.216	-0.081	-0.007	0.069	0.025	0.030	0.058	-0.019	0.095	0.151
48	0.105	-0.160	0.041	0.031	0.030	0.275	0.207	0.464	0.204	-0.064	0.006	0.067	0.004	0.030	0.043	-0.061	0.110	0.144
49	0.093	-0.175	0.081	0.016	0.062	0.269	0.376	0.698	0.281	-0.129	-0.041	0.068	0.015	0.024	0.067	-0.048	0.121	0.153
50	0.035	-0.034	-0.034	0.043	0.002	0.293	0.259	0.543	0.359	-0.130	-0.053	0.069	-0.014	0.058	0.015	-0.118	0.076	0.027
51	0.038	-0.020	-0.045	0.036	-0.002	0.231	0.202	0.421	0.231	-0.055	0.000	0.052	-0.004	0.052	0.006	-0.090	0.050	0.028
52	0.033	-0.014	-0.048	0.039	0.002	0.243	0.215	0.452	0.253	-0.070	-0.024	0.050	-0.008	0.052	0.004	-0.095	0.049	0.019
53	0.027	-0.012	-0.048	0.042	-0.001	0.244	0.221	0.474	0.289	-0.102	-0.057	0.056	-0.009	0.051	0.009	-0.092	0.056	0.014
54	0.019	-0.018	-0.045	0.054	0.001	0.224	0.196	0.434	0.291	-0.120	-0.066	0.046	-0.016	0.042	0.007	-0.088	0.048	0.002

OBS	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BB06A	BB06B	EB06C	EB06D
46	-0.057	0.047	0.427	-0.184	-0.244	0.056	0.596	0.560	1.000	0.647	0.585	0.957	0.443	0.337	0.355	0.360	0.320
47	-0.052	0.033	0.363	-0.150	-0.210	0.031	0.887	0.649	0.647	1.000	0.696	0.653	0.392	0.294	0.305	0.303	0.273
48	-0.027	0.075	0.373	-0.156	-0.216	0.057	0.609	0.851	0.585	0.696	1.000	0.595	0.386	0.306	0.307	0.295	0.260
49	-0.062	0.050	0.446	-0.196	-0.251	0.061	0.601	0.567	0.957	0.653	0.595	1.000	0.464	0.349	0.371	0.377	0.337
50	-0.005	0.108	0.486	-0.197	-0.297	0.144	0.356	0.373	0.443	0.392	0.386	0.464	1.000	0.440	0.478	0.543	0.599
51	-0.003	0.081	0.358	-0.136	-0.228	0.103	0.262	0.300	0.337	0.294	0.306	0.349	0.440	1.000	0.848	0.610	0.421
52	-0.001	0.085	0.377	-0.143	-0.237	0.112	0.277	0.302	0.355	0.305	0.307	0.371	0.478	0.848	1.000	0.718	0.493
53	-0.001	0.074	0.406	-0.156	-0.257	0.109	0.272	0.294	0.360	0.303	0.295	0.377	0.543	0.610	0.718	1.000	0.694
54	0.011	0.074	0.387	-0.161	-0.230	0.104	0.249	0.259	0.320	0.273	0.260	0.337	0.599	0.421	0.493	0.694	1.000

TABLE A.5.4 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SENIORS 1

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
1	MEAN	5.057	4.995	5.843	2.922	7.482	0.843	1.771	1.529	2.485	0.900	0.846	0.888	0.861	0.733
2	STDEV	1.683	2.457	2.805	1.948	1.871	0.364	0.845	0.807	1.102	0.300	0.361	0.315	0.346	0.442
3	BB101	1.000	0.334	0.434	-0.032	0.417	0.282	-0.108	-0.077	0.095	0.056	0.108	0.149	0.141	0.310
4	BB042	0.334	1.000	0.554	-0.036	0.235	-0.025	0.030	0.062	0.060	0.047	0.097	0.150	0.093	0.197
5	BB039	0.434	0.554	1.000	-0.015	0.297	0.014	-0.119	-0.068	0.094	0.037	0.088	0.153	0.086	0.307
6	SIBS	-0.032	-0.036	-0.015	1.000	0.180	0.008	-0.127	-0.125	-0.095	0.039	-0.010	-0.028	-0.060	-0.077
7	BB103	0.417	0.235	0.297	0.180	1.000	0.161	-0.138	-0.072	0.089	0.114	0.148	0.183	0.151	0.120
8	BOTHPAR	0.282	-0.025	0.014	0.008	0.161	1.000	-0.157	-0.178	0.044	0.085	0.112	0.122	0.110	0.233
9	BB037B	-0.108	0.030	-0.119	-0.127	-0.138	-0.157	1.000	0.601	-0.040	-0.046	-0.054	-0.082	-0.080	-0.114
10	BB037C	-0.077	0.062	-0.068	-0.125	-0.072	-0.178	0.601	1.000	-0.011	-0.056	-0.050	-0.070	-0.075	-0.139
11	BB047G	0.095	0.060	0.094	-0.095	0.089	0.044	-0.040	-0.011	1.000	0.046	0.056	0.075	0.094	0.101

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	ADVMTH	HMWRK	BB016	BB059E
1	0.782	0.058	0.050	0.347	0.239	0.263	0.151	0.639	0.286	0.280	2.994	5.182	2.130	0.299
2	0.413	0.234	0.217	0.476	0.426	0.440	0.358	0.480	0.452	0.449	1.340	3.772	1.144	0.458
3	0.218	-0.102	-0.112	-0.078	0.080	-0.038	0.054	-0.090	0.092	0.106	0.230	0.135	-0.027	0.140
4	0.208	-0.103	0.035	-0.032	0.032	-0.102	0.133	-0.217	0.122	0.122	0.239	0.260	-0.008	0.071
5	0.261	-0.091	-0.054	-0.037	0.048	-0.119	0.142	-0.157	0.157	0.144	0.291	0.216	0.005	0.103
6	-0.055	-0.004	-0.005	-0.065	-0.051	0.130	-0.013	0.201	-0.023	0.024	-0.061	-0.047	-0.006	-0.047
7	0.112	-0.130	-0.111	-0.034	0.042	0.048	-0.064	0.008	0.053	0.050	0.123	0.116	-0.035	0.047
8	0.091	-0.017	-0.147	-0.038	0.022	0.039	-0.024	0.096	0.056	0.052	0.020	0.001	-0.062	-0.021
9	-0.055	0.096	0.185	-0.019	0.024	-0.054	0.064	-0.070	-0.029	-0.074	-0.094	-0.049	0.027	0.042
10	-0.068	0.102	0.205	-0.058	0.047	-0.051	0.085	-0.118	0.002	-0.039	-0.061	-0.012	0.054	0.055
11	0.122	-0.033	-0.012	0.000	-0.012	0.023	-0.014	-0.045	0.059	0.045	0.058	0.188	-0.016	-0.073

OBS	MBB053E	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
1	2.989	2.875	2.416	2.307	2.142	2.454	2.934	1.990	0.227	0.693	0.210	0.088	6.209	0.657
2	0.344	0.296	0.312	0.284	0.401	0.299	0.080	0.304	0.137	0.461	0.407	0.284	0.904	0.475
3	0.189	-0.010	0.121	0.125	-0.078	0.245	0.213	-0.067	0.186	0.178	-0.098	-0.146	-0.056	-0.093
4	0.296	-0.017	0.205	0.137	-0.101	0.313	0.165	-0.010	0.253	0.246	-0.189	-0.128	-0.104	-0.217
5	0.299	-0.034	0.184	0.155	-0.112	0.337	0.189	0.001	0.288	0.303	-0.211	-0.192	-0.112	-0.186
6	-0.097	0.066	-0.018	-0.048	-0.000	-0.116	-0.084	-0.013	-0.068	-0.058	0.041	0.043	0.081	0.178
7	0.121	0.009	0.125	0.089	-0.077	0.137	0.138	-0.107	0.085	0.119	-0.083	-0.061	-0.000	-0.032
8	-0.032	0.017	0.006	0.017	0.013	0.024	0.081	-0.079	-0.025	0.010	0.027	-0.036	0.041	0.056
9	-0.050	-0.009	-0.029	0.010	0.075	-0.033	-0.061	-0.010	-0.072	-0.073	0.044	0.045	-0.028	0.014
10	0.034	-0.054	0.031	0.050	0.077	0.028	-0.024	-0.015	-0.002	-0.052	0.039	0.024	-0.086	-0.048
11	0.040	0.011	0.027	0.005	-0.022	0.087	0.069	0.015	0.013	0.054	-0.059	-0.005	-0.041	-0.026

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BB068A	BB068B	EB068C	EB068D
1	0.340	0.003	5.109	5.423	12.312	12.283	15.342	21.568	2.893	0.672	0.706	0.747	0.784
2	0.474	0.054	1.992	1.808	3.934	3.989	5.406	5.780	0.948	0.470	0.456	0.435	0.412
3	0.089	0.042	0.091	0.151	0.189	0.120	0.137	0.192	0.227	0.236	0.213	0.228	0.172
4	0.210	0.055	0.158	0.223	0.225	0.184	0.230	0.236	0.335	0.266	0.266	0.256	0.236
5	0.181	0.052	0.209	0.250	0.293	0.244	0.249	0.307	0.373	0.285	0.285	0.281	0.265
6	-0.176	-0.019	-0.054	-0.092	-0.048	-0.059	-0.099	-0.053	-0.079	-0.056	-0.084	-0.093	-0.060
7	0.028	0.042	0.096	0.141	0.118	0.122	0.110	0.124	0.141	0.148	0.136	0.110	0.094
8	-0.056	-0.000	0.057	0.088	0.040	0.066	0.065	0.043	-0.025	0.039	0.016	-0.007	-0.001
9	-0.013	-0.009	-0.094	-0.103	-0.142	-0.117	-0.106	-0.159	-0.028	-0.040	-0.041	-0.030	-0.066
10	0.048	-0.002	-0.066	-0.080	-0.090	-0.074	-0.088	-0.084	0.005	-0.031	-0.014	-0.006	-0.037
11	0.025	0.011	0.073	0.099	0.067	0.080	0.087	0.063	0.123	0.095	0.113	0.147	0.142

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE_SENIORS 2

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
12	BB104C	0.056	0.047	0.037	0.039	0.114	0.085	-0.046	-0.056	0.046	1.000	0.385	0.463	0.381	0.090
13	BB104D	0.108	0.097	0.088	-0.010	0.148	0.112	-0.054	-0.050	0.056	0.385	1.000	0.378	0.401	0.136
14	BB104G	0.149	0.150	0.153	-0.028	0.183	0.122	-0.082	-0.070	0.075	0.463	0.378	1.000	0.423	0.167
15	BB104I	0.141	0.093	0.086	-0.060	0.151	0.110	-0.080	-0.075	0.094	0.381	0.401	0.423	1.000	0.146
16	FATEXP	0.310	0.197	0.307	-0.077	0.120	0.233	-0.114	-0.139	0.101	0.090	0.136	0.167	0.146	1.000
17	MOTEXP	0.218	0.208	0.261	-0.055	0.112	0.091	-0.055	-0.068	0.122	0.114	0.137	0.198	0.156	0.711
18	HISPAN	-0.102	-0.103	-0.091	-0.004	-0.130	-0.017	0.096	0.102	-0.033	-0.052	-0.039	-0.049	-0.062	-0.025
19	BLACK	-0.112	0.035	-0.054	-0.005	-0.111	-0.147	0.185	0.205	-0.012	-0.023	-0.035	-0.052	-0.028	-0.071
20	REGION1	-0.078	-0.032	-0.037	-0.065	-0.034	-0.038	-0.019	-0.058	0.000	0.063	0.084	0.062	0.042	0.028
21	REGION2	0.080	0.032	0.048	-0.051	0.042	0.022	0.024	0.047	-0.012	-0.027	-0.109	-0.040	-0.021	0.013
22	REGION3	-0.038	-0.102	-0.119	0.130	0.048	0.039	-0.054	-0.051	0.023	-0.002	-0.001	-0.036	0.009	-0.070

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	ADVMTH	HMWRK	BB016	BB059E
12	0.114	-0.052	-0.023	0.063	-0.027	-0.002	-0.049	0.127	0.019	0.040	0.076	0.046	-0.034	-0.003
13	0.137	-0.039	-0.035	0.084	-0.109	-0.001	0.020	0.104	0.066	0.047	0.148	0.116	-0.074	-0.020
14	0.198	-0.049	-0.052	0.062	-0.040	-0.036	0.009	0.083	0.087	0.077	0.182	0.108	-0.028	0.024
15	0.156	-0.062	-0.028	0.042	-0.021	0.009	-0.042	0.068	0.045	0.085	0.164	0.096	-0.109	0.002
16	0.711	-0.025	-0.071	0.028	0.013	-0.070	0.034	0.001	0.138	0.149	0.307	0.180	-0.052	-0.015
17	1.000	0.005	0.001	0.019	0.020	-0.078	0.047	0.020	0.155	0.175	0.335	0.188	-0.068	-0.021
18	0.005	1.000	-0.057	-0.075	-0.022	-0.043	0.178	0.113	-0.021	-0.034	-0.044	-0.011	0.055	0.030
19	0.001	-0.057	1.000	-0.021	0.000	0.009	0.016	-0.112	0.004	-0.009	-0.024	0.001	0.022	-0.027
20	0.019	-0.075	-0.021	1.000	-0.408	-0.436	-0.307	0.151	-0.064	0.010	0.225	0.065	0.011	-0.050
21	0.020	-0.022	0.000	-0.408	1.000	-0.335	-0.236	-0.249	-0.075	0.019	-0.001	-0.081	-0.053	0.039
22	-0.078	-0.043	0.009	-0.436	-0.335	1.000	-0.252	0.195	0.054	-0.002	-0.149	-0.053	-0.039	-0.093

OBS	MBB053E	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
12	-0.018	0.043	-0.017	0.064	0.010	0.039	0.097	-0.063	-0.013	0.060	-0.059	0.004	0.067	0.011
13	0.082	0.073	0.052	0.140	0.037	0.086	0.139	-0.083	0.005	0.112	-0.083	-0.041	0.048	0.025
14	0.058	0.017	0.040	0.099	0.003	0.087	0.149	-0.080	0.044	0.156	-0.108	-0.074	0.038	-0.027
15	0.041	0.032	0.003	0.096	-0.002	0.057	0.106	-0.047	0.045	0.087	-0.080	-0.007	0.045	-0.029
16	0.142	0.065	0.088	0.138	-0.009	0.154	0.151	-0.072	0.093	0.290	-0.158	-0.238	-0.019	-0.020
17	0.153	0.078	0.104	0.136	0.020	0.133	0.125	-0.066	0.081	0.346	-0.202	-0.263	-0.014	0.002
18	0.008	0.084	-0.008	0.010	0.040	-0.056	-0.166	0.035	0.049	-0.028	0.054	-0.025	0.007	0.052
19	-0.018	-0.057	-0.005	0.017	0.055	-0.081	-0.115	0.055	-0.015	0.025	-0.015	-0.021	-0.025	0.032
20	0.073	0.157	0.018	-0.042	-0.158	-0.139	0.016	0.006	-0.083	0.122	-0.172	0.068	0.238	0.066
21	-0.088	-0.253	-0.085	0.076	0.049	0.075	0.052	-0.109	0.044	0.011	0.055	-0.096	-0.289	-0.212
22	-0.149	0.114	-0.078	-0.105	0.108	-0.227	-0.014	-0.100	-0.234	-0.166	0.127	0.078	0.257	0.278

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BB068A	BB068B	EB068C	EB068D
12	-0.012	0.007	0.083	0.096	0.087	0.086	0.081	0.090	0.076	0.079	0.062	0.068	0.037
13	-0.026	0.015	0.104	0.141	0.145	0.128	0.125	0.142	0.129	0.127	0.100	0.111	0.078
14	0.026	0.014	0.158	0.202	0.195	0.194	0.199	0.188	0.175	0.172	0.169	0.173	0.152
15	0.027	0.013	0.162	0.180	0.183	0.170	0.170	0.197	0.153	0.116	0.085	0.096	0.103
16	0.017	0.024	0.209	0.224	0.285	0.224	0.212	0.281	0.418	0.318	0.355	0.410	0.448
17	-0.005	0.023	0.216	0.237	0.322	0.234	0.240	0.308	0.458	0.341	0.400	0.462	0.505
18	-0.051	-0.010	-0.065	-0.077	-0.096	-0.096	-0.089	-0.103	0.037	0.003	-0.005	0.006	-0.005
19	-0.032	0.004	-0.082	-0.098	-0.112	-0.098	-0.086	-0.111	0.057	0.010	0.037	0.051	0.053
20	-0.065	-0.016	0.074	0.113	0.113	0.084	0.156	0.117	0.045	0.077	0.066	0.026	0.017
21	0.210	0.025	-0.048	-0.063	-0.027	-0.029	-0.082	-0.028	0.022	-0.003	0.009	0.037	0.010
22	-0.280	0.011	-0.013	-0.049	-0.082	-0.034	-0.070	-0.095	-0.095	-0.090	-0.085	-0.080	-0.070

TABLE A.5.4 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SENIORS 3

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
23	REGION4	0.054	0.133	0.142	-0.013	-0.064	-0.024	0.064	0.085	-0.014	-0.049	0.020	0.009	-0.042	0.034
24	RELCATH	-0.090	-0.217	-0.157	0.201	0.008	0.096	-0.070	-0.118	-0.045	0.127	0.104	0.083	0.068	0.001
25	BB011C	0.092	0.122	0.157	-0.023	0.053	0.056	-0.029	0.002	0.059	0.019	0.066	0.087	0.045	0.138
26	BB011D	0.106	0.122	0.144	0.024	0.050	0.052	-0.074	-0.039	0.045	0.040	0.047	0.077	0.085	0.149
27	ADVMTH	0.230	0.239	0.291	-0.061	0.123	0.020	-0.094	-0.061	0.058	0.076	0.148	0.182	0.164	0.307
28	HMWRK	0.135	0.260	0.216	-0.047	0.116	0.001	-0.049	-0.012	0.188	0.046	0.116	0.108	0.096	0.180
29	BB016	-0.027	-0.008	0.005	-0.006	-0.035	-0.062	0.027	0.054	-0.016	-0.034	-0.074	-0.028	-0.109	-0.052
30	BB059E	0.140	0.071	0.103	-0.047	0.047	-0.021	0.042	0.055	-0.073	-0.003	-0.020	0.024	0.002	-0.015
31	MBB053E	0.189	0.296	0.299	-0.097	0.121	-0.032	-0.050	0.034	0.040	-0.018	0.082	0.058	0.041	0.142
32	MBB053F	-0.010	-0.017	-0.034	0.066	0.009	0.017	-0.009	-0.054	0.011	0.043	0.073	0.017	0.032	0.065
33	MBB053G	0.121	0.205	0.184	-0.018	0.125	0.006	-0.029	0.031	0.027	-0.017	0.052	0.040	0.003	0.088

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	ADVMTH	HMWRK	BB016	BB059E
23	0.047	0.178	0.016	-0.307	-0.236	-0.252	1.000	-0.144	0.107	-0.034	-0.114	0.076	0.096	0.133
24	0.020	0.113	-0.112	0.151	-0.249	0.195	-0.144	1.000	0.063	0.025	0.052	-0.058	-0.072	-0.119
25	0.155	-0.021	0.004	-0.064	-0.075	0.054	0.107	0.063	1.000	0.408	0.269	0.198	0.003	0.023
26	0.175	-0.034	-0.009	0.010	0.019	-0.002	-0.034	0.025	0.408	1.000	0.447	0.222	-0.082	-0.050
27	0.335	-0.044	-0.024	0.225	-0.001	-0.149	-0.114	0.052	0.269	0.447	1.000	0.304	-0.125	-0.008
28	0.188	-0.011	0.001	0.065	-0.081	-0.053	0.076	-0.058	0.198	0.222	0.304	1.000	-0.125	-0.117
29	-0.068	0.055	0.022	0.011	-0.053	-0.039	0.096	-0.072	0.003	-0.082	-0.125	-0.125	1.000	0.279
30	-0.021	0.030	-0.027	-0.050	0.039	-0.093	0.133	-0.119	0.023	-0.050	-0.008	-0.117	0.279	1.000
31	0.153	0.008	-0.018	0.073	-0.088	-0.149	0.190	-0.206	0.037	0.091	0.323	0.322	-0.020	0.081
32	0.078	0.084	-0.057	0.157	-0.253	0.114	-0.047	0.354	0.033	0.055	0.153	0.145	-0.092	-0.119
33	0.104	-0.008	-0.005	0.018	-0.085	-0.078	0.173	-0.041	0.048	0.086	0.227	0.263	-0.052	-0.002

OBS	MBB053E	MBB053F	MBB053G	MYB019A	MYB019B	MYB019E	MYB019F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
23	0.190	-0.047	0.173	0.095	0.020	0.375	-0.066	0.246	0.349	0.029	0.007	-0.072	-0.287	-0.178
24	-0.206	0.354	-0.041	-0.027	0.129	-0.352	-0.160	-0.230	-0.385	-0.027	-0.016	0.067	0.476	0.710
25	0.037	0.033	0.048	0.044	-0.031	0.071	0.032	-0.004	0.082	0.209	-0.135	-0.134	0.050	0.063
26	0.091	0.055	0.086	0.098	0.027	0.051	0.069	-0.059	0.016	0.221	-0.157	-0.120	0.023	0.030
27	0.323	0.153	0.227	0.291	0.065	0.113	0.163	-0.217	0.040	0.468	-0.292	-0.309	0.058	0.056
28	0.322	0.145	0.263	0.188	-0.004	0.260	0.138	-0.083	0.114	0.270	-0.235	-0.092	-0.005	-0.118
29	-0.020	-0.092	-0.052	-0.127	-0.129	0.039	-0.036	0.195	0.148	-0.068	0.035	0.051	-0.066	-0.095
30	0.081	-0.119	-0.002	0.010	-0.174	0.119	0.040	0.109	0.293	0.004	0.030	-0.061	-0.080	-0.157
31	1.000	0.270	0.759	0.487	0.194	0.412	0.226	-0.206	0.215	0.316	-0.257	-0.138	-0.217	-0.231
32	0.270	1.000	0.418	0.220	0.295	-0.143	0.012	-0.461	-0.372	0.135	-0.151	0.014	0.490	0.431
33	0.759	0.418	1.000	0.432	0.340	0.291	0.200	-0.317	-0.013	0.256	-0.212	-0.111	-0.089	0.036

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BB068A	BB068B	EB068C	EB068D
23	0.181	-0.023	-0.027	-0.014	-0.015	-0.036	-0.024	-0.001	0.030	0.012	0.006	0.021	0.016
24	-0.705	-0.052	-0.038	-0.029	-0.038	-0.074	-0.050	-0.054	-0.063	-0.030	-0.021	-0.051	-0.025
25	-0.064	0.008	0.225	0.291	0.268	0.253	0.318	0.276	0.262	0.177	0.183	0.206	0.196
26	-0.034	0.031	0.252	0.245	0.402	0.274	0.285	0.429	0.278	0.204	0.208	0.221	0.190
27	-0.063	0.059	0.395	0.447	0.620	0.444	0.447	0.640	0.522	0.407	0.424	0.428	0.381
28	0.111	0.062	0.219	0.265	0.260	0.228	0.260	0.278	0.376	0.202	0.222	0.256	0.251
29	0.095	0.002	-0.121	-0.085	-0.137	-0.121	-0.070	-0.140	-0.084	-0.032	-0.060	-0.065	-0.073
30	0.156	0.006	-0.018	-0.006	-0.060	-0.003	-0.007	-0.060	-0.021	0.038	0.012	-0.014	-0.048
31	0.222	0.084	0.203	0.247	0.234	0.226	0.249	0.260	0.282	0.242	0.226	0.219	0.153
32	-0.436	0.030	-0.093	0.133	0.105	0.073	0.135	0.087	0.099	0.092	0.092	0.071	0.046
33	-0.044	0.063	0.097	0.133	0.134	0.104	0.121	0.145	0.176	0.175	0.169	0.153	0.111

TABLE A.5.4 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SENIORS 4

OBS	_NAME_	BB101	BB042	BB039	SIBS	BB103	BOTHPAR	BB037B	BB037C	BB047G	BB104C	BB104D	BB104G	BB104I	FATEXP
34	MYBO19A	0.125	0.137	0.155	-0.048	0.089	0.017	0.010	0.050	0.005	0.064	0.140	0.099	0.096	0.138
35	MYBO19B	-0.078	-0.101	-0.112	-0.000	-0.077	0.013	0.075	0.077	-0.022	0.010	0.037	0.003	-0.002	-0.009
36	MYBO19E	0.245	0.313	0.337	-0.116	0.137	0.024	-0.033	0.028	0.087	0.039	0.086	0.087	0.057	0.154
37	MYBO19F	0.213	0.165	0.189	-0.084	0.138	0.081	-0.061	-0.024	0.069	0.097	0.139	0.149	0.106	0.151
38	MABSENT	-0.067	-0.010	0.001	-0.013	-0.107	-0.079	-0.010	-0.015	0.015	-0.063	-0.083	-0.080	-0.047	-0.072
39	MCUTCLS	0.186	0.253	0.288	-0.068	0.085	-0.025	-0.072	-0.002	0.013	-0.013	0.005	0.044	0.045	0.093
40	ACADEM	0.178	0.246	0.303	-0.058	0.119	0.010	-0.073	-0.052	0.054	0.060	0.112	0.156	0.087	0.290
41	GENERAL	-0.098	-0.189	-0.211	0.041	-0.083	0.027	0.044	0.039	-0.059	-0.059	-0.083	-0.108	-0.080	-0.158
42	VOCATNL	-0.146	-0.128	-0.192	0.043	-0.061	-0.036	0.045	0.024	-0.005	0.004	-0.041	-0.074	-0.007	-0.238
43	LGSIZE	-0.056	-0.104	-0.112	0.081	-0.000	0.041	-0.028	-0.086	-0.041	0.067	0.048	0.038	0.045	-0.019
44	SCHCATH	-0.093	-0.217	-0.186	0.178	-0.032	0.056	0.014	-0.048	-0.026	0.011	0.025	-0.027	-0.029	-0.020

OBS	MOTEXP	HISPAN	BLACK	REGION1	REGION2	REGION3	REGION4	RELCATH	BB011C	BB011D	ADVMTH	HMWRK	BB016	BB059E
34	0.136	0.010	0.017	-0.042	0.076	-0.105	0.095	-0.027	0.044	0.098	0.291	0.188	-0.127	0.010
35	0.020	0.040	0.055	-0.158	0.049	0.108	0.020	0.129	-0.031	0.027	0.065	-0.004	-0.129	-0.174
36	0.133	-0.056	-0.081	-0.139	0.075	-0.227	0.375	-0.352	0.071	0.051	0.113	0.260	0.039	0.119
37	0.125	-0.166	-0.115	0.016	0.052	-0.014	-0.066	-0.160	0.032	0.069	0.163	0.138	-0.036	0.040
38	-0.066	0.035	0.055	0.006	-0.109	-0.100	0.246	-0.230	-0.004	-0.059	-0.217	-0.083	0.195	0.109
39	0.081	0.049	-0.015	-0.083	0.044	-0.234	0.349	-0.385	0.082	0.016	0.040	0.114	0.148	0.293
40	0.346	-0.028	0.025	0.122	0.011	-0.166	0.029	-0.027	0.209	0.221	0.468	0.270	-0.068	0.004
41	-0.202	0.054	-0.015	-0.172	0.055	0.127	0.007	-0.016	-0.135	-0.157	-0.292	-0.235	0.035	0.030
42	-0.263	-0.025	-0.021	0.068	-0.096	0.078	-0.072	0.067	-0.134	-0.120	-0.309	-0.092	0.051	-0.061
43	-0.014	0.007	-0.025	0.238	-0.289	0.257	-0.287	0.476	0.050	0.023	0.058	-0.005	-0.066	-0.080
44	0.002	0.052	0.032	0.066	-0.212	0.278	-0.178	0.710	0.063	0.030	0.056	-0.118	-0.095	-0.157

OBS	MBBO53E	MBBO53F	MBBO53G	MYBO19A	MYBO19B	MYBO19E	MYBO19F	MABSENT	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHCATH
34	0.487	0.220	0.432	1.000	0.591	0.373	0.266	-0.544	-0.122	0.262	-0.136	-0.218	-0.292	0.103
35	0.194	0.295	0.340	0.591	1.000	0.081	0.041	-0.448	-0.599	0.040	0.004	-0.074	-0.224	0.313
36	0.412	-0.143	0.291	0.373	0.081	1.000	0.420	0.051	0.329	0.158	-0.069	-0.165	-0.597	-0.361
37	0.226	0.012	0.200	0.266	0.041	0.420	1.000	-0.221	-0.003	0.152	-0.095	-0.109	-0.141	-0.084
38	-0.206	-0.461	-0.317	-0.544	-0.448	0.051	-0.221	1.000	0.524	-0.169	0.123	0.072	-0.254	-0.419
39	0.215	-0.372	-0.013	-0.122	-0.599	0.329	-0.003	0.524	1.000	0.096	-0.040	-0.099	-0.265	-0.565
40	0.316	0.135	0.256	0.262	0.040	0.158	0.152	-0.169	0.096	1.000	-0.774	-0.468	-0.009	-0.012
41	-0.257	-0.151	-0.212	-0.136	0.004	-0.069	-0.095	0.123	-0.040	-0.774	1.000	-0.160	-0.093	-0.005
42	-0.138	0.014	-0.111	-0.218	-0.074	-0.165	-0.109	0.072	-0.099	-0.468	-0.160	1.000	0.168	0.027
43	-0.217	0.490	-0.089	-0.292	-0.224	-0.597	-0.141	-0.254	-0.265	-0.009	-0.093	0.168	1.000	0.471
44	-0.231	0.431	0.036	0.103	0.313	-0.361	-0.084	-0.419	-0.565	-0.012	-0.005	0.027	0.471	1.000

OBS	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BB068A	BB068B	EB068C	EB068D
34	-0.111	0.071	0.117	0.165	0.145	0.111	0.155	0.155	0.232	0.212	0.208	0.193	0.142
35	-0.317	0.032	-0.026	-0.036	-0.045	-0.049	-0.067	-0.047	0.009	0.025	0.022	0.010	-0.001
36	0.357	0.040	0.079	0.143	0.089	0.107	0.135	0.113	0.208	0.165	0.159	0.149	0.115
37	0.085	-0.009	0.130	0.196	0.172	0.157	0.173	0.171	0.171	0.211	0.214	0.157	0.135
38	0.422	-0.018	-0.107	-0.147	-0.117	-0.102	-0.133	-0.108	-0.098	-0.149	-0.149	-0.131	-0.104
39	0.565	0.012	0.062	0.086	0.099	0.091	0.102	0.118	0.136	0.072	0.067	0.095	0.082
40	0.008	0.035	0.312	0.331	0.403	0.327	0.343	0.405	0.465	0.353	0.384	0.406	0.388
41	0.009	-0.027	-0.205	-0.242	-0.255	-0.217	-0.256	-0.269	-0.284	-0.222	-0.240	-0.252	-0.236
42	-0.025	-0.017	-0.172	-0.166	-0.243	-0.176	-0.168	-0.236	-0.328	-0.229	-0.256	-0.279	-0.281
43	-0.469	-0.026	0.045	0.049	0.027	0.022	0.052	0.013	-0.062	-0.006	0.001	-0.015	-0.011
44	-0.993	-0.075	-0.084	-0.057	-0.079	-0.126	-0.073	-0.103	-0.073	0.000	0.017	-0.010	0.008

TABLE A.5.4 (CONT'D)

MEANS, STANDARD DEVIATIONS AND CORRELATION COEFFICIENTS OF VARIABLES USED IN THE REPORT: PRIVATE SENIORS 5

OBS	NAME_	BBO1	BBO42	BBO39	SIBS	BB13	BOTHPAR	BBO37B	BBO34G	BB1O4C	BB1O4D	BBO44G	BBO44I	FATEXP	MOTEXP	HISPAN	BLACK	REGION1
45	SCHOPRIV	0.089	0.210	0.181	-0.176	0.028	-0.056	-0.013	0.048	0.025	-0.012	-0.026	0.026	0.027	0.017	-0.005	-0.051	-0.032	-0.065
46	SCHELITE	0.042	0.055	0.052	-0.019	0.042	-0.000	-0.009	-0.002	0.011	0.007	0.015	0.014	0.013	0.024	0.023	-0.010	0.004	-0.016
47	READBOTH	0.091	0.158	0.209	-0.054	0.096	0.057	-0.094	-0.066	0.073	0.083	0.104	0.158	0.162	0.209	0.216	-0.065	-0.082	0.074
48	VOCBOTH	0.151	0.223	0.250	-0.092	0.141	0.088	-0.103	-0.080	0.099	0.096	0.141	0.202	0.180	0.224	0.237	-0.077	-0.098	0.113
49	MATHBOTH	0.189	0.225	0.293	-0.048	0.118	0.040	-0.142	-0.090	0.067	0.087	0.145	0.195	0.183	0.285	0.322	-0.096	-0.112	0.113
50	TOTREAD	0.120	0.184	0.244	-0.059	0.122	0.066	-0.117	-0.074	0.080	0.086	0.128	0.194	0.170	0.224	0.234	-0.096	-0.098	0.084
51	TOTVOC	0.137	0.230	0.249	-0.099	0.110	0.065	-0.106	-0.088	0.087	0.081	0.125	0.199	0.170	0.212	0.240	-0.089	-0.086	0.156
52	TOTMATH	0.192	0.236	0.307	-0.053	0.124	0.043	-0.159	-0.084	0.063	0.090	0.142	0.188	0.197	0.281	0.308	-0.103	-0.111	0.117
53	EDPLANS	0.227	0.335	0.373	-0.079	0.141	-0.025	-0.028	0.005	0.123	0.076	0.129	0.175	0.153	0.418	0.458	0.037	0.057	0.045

OBS	REGION2	REGION3	REGION4	RELATH	BBO1C	BBO1D	ADVMTH	HMWRK	BBO16	BBO5E	MBBO53E	MBBO53F	MBBO53G	MYBO51A	MYBO119B	MYBO119E	MYBO119F	MABSENT
45	0.210	-0.280	0.181	-0.705	-0.064	-0.034	-0.063	0.111	0.095	0.156	0.222	-0.436	-0.044	-0.111	-0.317	0.357	0.085	0.422
46	0.025	0.011	-0.023	-0.052	0.008	0.031	0.059	0.062	0.002	0.006	0.084	0.030	0.063	0.071	0.032	0.040	-0.009	-0.018
47	-0.048	-0.013	-0.027	-0.038	0.225	0.252	0.395	0.219	-0.121	-0.018	0.203	0.093	0.097	0.117	-0.026	0.079	0.130	-0.107
48	-0.063	-0.049	-0.014	-0.029	0.291	0.245	0.447	0.265	-0.085	-0.006	0.247	0.133	0.133	0.165	-0.036	0.143	0.196	-0.147
49	-0.027	-0.082	-0.015	-0.038	0.268	0.402	0.620	0.260	-0.137	-0.060	0.234	0.105	0.134	0.145	-0.045	0.089	0.172	-0.117
50	-0.029	-0.034	-0.036	-0.074	0.253	0.274	0.444	0.228	-0.121	-0.003	0.226	0.073	0.104	0.111	-0.049	0.107	0.157	-0.102
51	-0.082	-0.070	-0.024	-0.050	0.318	0.285	0.447	0.260	-0.070	-0.007	0.249	0.135	0.121	0.155	-0.067	0.135	0.173	-0.133
52	-0.028	-0.095	-0.001	-0.054	0.276	0.429	0.640	0.278	-0.140	-0.060	0.260	0.087	0.145	0.155	-0.047	0.113	0.171	-0.108
53	0.022	-0.095	0.030	-0.063	0.262	0.278	0.522	0.376	-0.084	-0.021	0.282	0.099	0.176	0.232	0.009	0.208	0.171	-0.098

OBS	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHATH	SCHOPRIV	SCHELITE	READBOTH	VOCBOTH	MATHBOTH	TOTREAD	TOTVOC	TOTMATH	EDPLANS	BBO6A	BBO6B	BEO6C	BEO6D
45	0.565	0.008	0.009	-0.025	-0.469	-0.993	1.000	-0.039	0.079	0.050	0.073	0.120	0.066	0.096	0.068	-0.004	-0.020	0.006	-0.011
46	0.012	0.035	-0.027	-0.017	-0.026	-0.075	-0.039	1.000	0.043	0.054	0.056	0.051	0.063	0.062	0.047	0.032	0.032	0.031	0.027
47	0.062	0.312	-0.205	-0.172	0.045	-0.084	0.079	0.043	1.000	0.543	0.553	0.879	0.595	0.555	0.343	0.243	0.263	0.267	0.237
48	0.086	0.331	-0.242	-0.166	0.049	-0.057	0.050	0.054	0.543	1.000	0.551	0.619	0.847	0.557	0.417	0.316	0.326	0.309	0.260
49	0.099	0.403	-0.255	-0.243	0.027	-0.079	0.073	0.056	0.553	0.551	1.000	0.616	0.577	0.955	0.453	0.358	0.373	0.371	0.337
50	0.091	0.327	-0.217	-0.176	0.022	-0.126	0.120	0.051	0.879	0.619	0.616	1.000	0.680	0.627	0.383	0.275	0.281	0.280	0.245
51	0.102	0.343	-0.256	-0.168	0.052	-0.073	0.066	0.063	0.595	0.847	0.577	0.680	1.000	0.598	0.426	0.302	0.306	0.287	0.259
52	0.118	0.405	-0.269	-0.236	0.013	-0.103	0.096	0.062	0.555	0.557	0.955	0.627	0.598	1.000	0.458	0.351	0.362	0.361	0.325
53	0.136	0.465	-0.284	-0.328	-0.062	-0.073	0.068	0.047	0.343	0.417	0.453	0.383	0.426	0.458	1.000	0.434	0.480	0.543	0.556

OBS	NAME	BB1O1	BBO42	BBO39	SIBS	BB1O3	BOTHPAR	BBO37B	BBO37C	BBO47G	BB1O4C	BB1O4D	BB1O4G	BB1O4I	FATEXP	MOTEXP	HISPAN	BLACK	REGION1
54	BB068A	0.236	0.266	0.285	-0.056	0.148	0.039	-0.040	-0.031	0.095	0.079	0.127	0.172	0.116	0.318	0.341	0.003	0.010	0.077
55	BB068B	0.213	0.266	0.285	-0.084	0.136	0.016	-0.041	-0.014	0.113	0.062	0.100	0.169	0.085	0.355	0.400	-0.005	0.037	0.066
56	EB068C	0.228	0.256	0.281	-0.093	0.110	-0.007	-0.030	-0.006	0.147	0.068	0.111	0.173	0.096	0.410	0.462	0.006	0.051	0.026
57	EB068D	0.172	0.236	0.265	-0.060	0.094	-0.001	-0.066	-0.037	0.142	0.037	0.078	0.152	0.103	0.448	0.505	-0.005	0.053	0.017

OBS	REGION2	REGION3	REGION4	RELATH	BBO1C	BBO1D	ADVMTH	HMWRK	BBO16	BBO5E	MBBO53E	MBBO53F	MBBO53G	MYBO19A	MYBO19B	MYBO19E	MYBO19F	MABSENT
54	-0.003	-0.090	0.012	-0.030	0.177	0.204	0.407	0.202	-0.032	0.038	0.242	0.092	0.175	0.212	0.025	0.165	0.211	-0.149
55	0.009	-0.085	0.006	-0.021	0.183	0.208	0.424	0.222	-0.060	0.012	0.226	0.092	0.169	0.208	0.022	0.159	0.214	-0.149
56	0.037	-0.080	0.021	-0.051	0.206	0.221	0.428	0.256	-0.065	-0.014	0.219	0.071	0.153	0.193	0.010	0.149	0.157	-0.131
57	0.040	-0.070	0.016	-0.025	0.196	0.190	0.381	0.251	-0.073	-0.048	0.153	0.046	0.111	0.142	-0.001	0.115	0.135	-0.104

OBS	MCUTCLS	ACADEM	GENERAL	VOCATNL	LGSIZE	SCHSCATH	SCHOPRIV	SCHLITE	READBOTH	VOCBOTH	MATHBOTH	TOTHREAD	TOTVOCAB	TOTMATH	EDPLANS	BBO68A	BBO68B	EBO68C	EBO68D
54	0.072	0.353	-0.222	-0.229	-0.006	0.000	-0.004	0.032	0.243	0.316	0.358	0.275	0.302	0.351	0.434	1.000	0.835	0.615	0.384
55	0.067	0.384	-0.240	-0.256	0.001	0.017	-0.020	0.032	0.263	0.326	0.373	0.281	0.306	0.362	0.480	0.835	1.000	0.749	0.490
56	0.095	0.406	-0.252	-0.279	-0.015	-0.010	0.006	0.031	0.267	0.309	0.371	0.280	0.287	0.361	0.543	0.615	0.749	1.000	0.680
57	0.082	0.388	-0.236	-0.281	-0.011	0.008	-0.011	0.027	0.237	0.260	0.337	0.245	0.259	0.325	0.556	0.384	0.490	0.680	1.000

APPENDIX B

ITEMS FROM THE STUDENT AND SCHOOL QUESTIONNAIRES USED IN THE ANALYSIS

B.1 Coding procedures used in this report

In general, values used in the analysis are the same as given in the HIGH SCHOOL BEYOND Codebook. Exceptions are described below and should be read in conjunction with section B.2 of this appendix.

Missing values: In appendix B.2, an asterisk (*) has been placed beside those response categories which were set to missing in the analysis. For example, in BB039 (Father's education), the responses "Do not live with Father" and "Don't know" have been set to missing.

Collapsed categories: Response categories that were collapsed in the analysis have been bracketed in the variable listing in Appendix B.2.

Variable reconstruction: The values on a limited number of variables were reconstructed:

Coursework taken: For seniors, EB04A—K recoded such that None=0, 1/2 year = 1, ... More than 3 years = 7. For sophomores, items YB006A—K and items YB009A—K were combined to match the senior coding.

Advanced mathematics courses: EB005A-G responses were recoded where 1=have taken, 0=have not taken. Responses then summed across items.

Honors English and Honors Mathematics: BB011C and BB011D recoded where 1=Yes, 0=No.

Homework: BB015 recoded to estimate actual hours. No homework assigned or no homework done = 0; Less than one hour a week = .5; Between 1 and 3 hours a week = 2; More than 3 hours, less than 5 = 4, Between 5 and 10 hours = 7.5; and More than 10 hours a week = 12.5.

Two Parent Household: Using BB036B-E variable was constructed such that if respondent lived either with own mother or female guardian and with either father or male guardian, then respondent was considered to be living in two parent household and response value = 1. Otherwise, response value = 0.

Mother's and Father's expectations: Items BB050A and BB050B were used to construct this variable. If response was "go to college" variable was coded 1, otherwise it was coded 0.

Cutting class: BB059E was recoded where True = 1, otherwise coded as 0.

Race: Coded black (1) if response to BB089 equals black (1) and response to BB090 is not equal to one of Hispanic or Spanish categories.

Ethnicity: Ethnicity is considered Hispanic (1) if response to BB090 is one of the Hispanic or Spanish categories.

Siblings: Items BB096A-E are used to construct sibling variable. Responses are first recoded to None=0, One=1, Two=2, Three=3, Four=4, and Five or more=5. Then these adjusted response values are summed over all items.

Household possessions: BB104C-I are recoded where Have=1, Otherwise=0.

B.2 Items from the Student Questionnaire

EB004A--K

4. Starting with the beginning of the tenth grade and through the end of this school year how much course work will you have taken in each of the following subjects?

Count only courses that meet at least three times (or three periods) a week. (MARK ONE OVAL FOR EACH LINE)

	None	1/2 year	1 year	1 1/2 years	2 years	2 1/2 years	3 years	More than 3 years
a. Mathematics	O	O	O	O	O	O	O	O
b. English or literature	O	O	O	O	O	O	O	O
c. French	O	O	O	O	O	O	O	O
d. German	O	O	O	O	O	O	O	O
e. Spanish	O	O	O	O	O	O	O	O
f. History or social studies	O	O	O	O	O	O	O	O
g. Science	O	O	O	O	O	O	O	O
h. Business, office, or sales	O	O	O	O	O	O	O	O
i. Trade and industry	O	O	O	O	O	O	O	O
j. Technical courses	O	O	O	O	O	O	O	O
k. Other vocational courses	O	O	O	O	O	O	O	O

YB006A--K

6. During the tenth grade, including all of this school year, how much course work will you have taken in each of the following subjects? Count only courses that meet at least three times (or three periods) a week. (MARK ONE OVAL FOR EACH LINE)

	None	1/2 year	1 year	More than 1 year
a. Mathematics	O	O	O	O
b. English or literature	O	O	O	O
c. French	O	O	O	O
d. German	O	O	O	O
e. Spanish	O	O	O	O
f. History or social studies	O	O	O	O
g. Science	O	O	O	O
h. Business, office, or sales	O	O	O	O
i. Trade and industry	O	O	O	O
j. Technical courses	O	O	O	O
k. Other vocational courses	O	O	O	O

* First two letters in variable identification refer to grade of respondents; "EB" refers to seniors (elder), "YB" refers to sophomores (younger), and "BB" refers to items asked both of

YB009A--K

9. During the 11th and 12th grades, how much course work do you plan to take in each of the following subjects? (MARK ONE OVAL FOR EACH LINE)

	None	1/2 year	1 year	1 1/2 years	2 years	More than 2 years	* Don't know yet
a. Mathematics	O	O	O	O	O	O	O
b. English or literature	O	O	O	O	O	O	O
c. French	O	O	O	O	O	O	O
d. German	O	O	O	O	O	O	O
e. Spanish	O	O	O	O	O	O	O
f. History or social studies	O	O	O	O	O	O	O
g. Science	O	O	O	O	O	O	O
h. Business, office, or sales	O	O	O	O	O	O	O
i. Trade and industry	O	O	O	O	O	O	O
j. Technical courses	O	O	O	O	O	O	O
k. Other vocational courses	O	O	O	O	O	O	O

EB005A--G

5. Which of the following courses have you taken, counting the courses you are taking this semester? (MARK ONE OVAL FOR EACH LINE)

	Yes, have taken	No, have not taken
a. First-year algebra	O	O
b. Second-year algebra	O	O
c. Geometry	O	O
d. Trigonometry	O	O
e. Calculus	O	O
f. Physics	O	O
g. Chemistry	O	O

BB011

13. Have you ever been in any of the following kinds of courses or programs in high school? (MARK ONE OVAL FOR EACH LINE)

	No	Yes
a. Remedial English (sometimes called basic or essential)	O	O
b. Remedial Mathematics (sometimes called basic or essential)	O	O
c. Advanced or honors program in English	O	O
d. Advanced or honors program in Mathematics	O	O

BB015

15. Approximately what is the average amount of time you spend on homework a week? (MARK ONE)

- No homework is ever assigned ..... O
- I have homework, but I don't do it ..... O
- Less than 1 hour a week ..... O
- Between 1 and 3 hours a week ..... O
- More than 3 hours, less than 5 hours a week ..... O
- Between 5 and 10 hours a week ..... O
- More than 10 hours a week ..... O

BB016

17. Between the beginning of school last fall and Christmas vacation, about how many days were you absent from school for any reason, not counting illness? (MARK ONE)

- None ..... O
- 1 or 2 days ..... O
- 3 or 4 days ..... O
- 5 to 10 days ..... O
- 11 to 15 days ..... O
- 16 to 20 days ..... O
- 21 or more ..... O

BB017

18. Between the beginning of school last fall and Christmas vacation, about how many days were you late to school? (MARK ONE)

- None ..... O
- 1 or 2 days ..... O
- 3 or 4 days ..... O
- 5 to 10 days ..... O
- 11 to 15 days ..... O
- 16 to 20 days ..... O
- 21 or more ..... O

YB019A--F

19. To what extent are the following disciplinary matters problems in your school? (MARK ONE OVAL FOR EACH LINE)

	Often happens	Sometimes happens	Rarely or never happens
Students don't attend school	O	O	O
Students cut classes, even if they attend school	O	O	O
Students talk back to teachers	O	O	O
Students refuse to obey instructions	O	O	O
Students get in fights with each other	O	O	O
Students attack or threaten to attack teachers	O	O	O

YB020A--E

20. Listed below are certain rules which some schools have. Please mark those which are enforced in your school. (MARK ALL THAT APPLY)

School grounds closed to students at lunch time ..... O
Students responsible to the school for property damage ..... O
Hall passes required ..... O
"No smoking" rules ..... O
Rules about student dress ..... O

BB019

22. Did you do any work for pay last week, not counting work around the house? (MARK ONE)

Yes ..... O
No ..... O

BB032B--G, J, L--O and YB034L

34. Have you participated in any of the following types of activities either in or out of school this year? (MARK ONE OVAL FOR EACH LINE)

	Have not participated	Have participated actively
a. Athletic teams - in or out of school	O	O
b. Cheer leaders, pep club, majorettes	O	O
c. Debating or drama	O	O
d. Band or orchestra	O	O
e. Chorus or dance	O	O
f. Hobby clubs such as photography, model building, hot rod, electronics, crafts	O	O
g. School subject-matter clubs, such as science, history, language, business, art	O	O
h. Vocational education clubs, such as Future Homemakers, Teachers, Farmers of America, DECA, FBLA, or VICA	O	O
i. Youth organizations in the community, such as Scouts, Y, etc.	O	O
j. Church activities, including youth groups	O	O
k. Junior Achievement	O	O
l. Co-op club	O	O

BB032A--O*

32. Have you participated in any of the following types of activities either in or out of school this year? (MAKE ONE OVAL FOR EACH LINE)

	Have not participated	Have participated actively (but not as a leader or officer)	Have participated as a leader or officer
a. Varsity athletic teams	O	O	O
b. Other athletic teams - in or out of school	O	O	O
c. Cheer leaders, pep club, majorettes	O	O	O
d. Debating or drama	O	O	O
e. Band or orchestra	O	O	O
f. Chorus or dance	O	O	O
g. Hobby clubs such as photography, model building, hot rod, electronics, crafts	O	O	O
h. Honorary clubs, such as Beta Club or National Honor Society	O	O	O
i. School newspaper, magazine, yearbook, annual	O	O	O
j. School subject-matter clubs, such as science, history, language, business, art	O	O	O
k. Student council, student government, political club	O	O	O
l. Vocational education clubs, such as Future Homemakers, Teachers, Farmers of America, DECA, FBLA, or VICA	O	O	O
m. Youth organizations in the community, such as Scouts, Y, etc.	O	O	O
n. Church activities, including youth groups	O	O	O
o. Junior Achievement	O	O	O

BB036A--K

36. Which of the following people live in the same household with you? (MARK ALL THAT O APPLY)

a. I live alone O
b. Father O
c. Other male guardian (step-father or foster father) O
d. Mother O
e. Other female guardian (step-mother or foster mother) O
f. Brother(s) and/or sister(s) (including step- or half-) O
g. Grandparent(s) O
h. My husband/wife O
i. My child or my children O
j. Other relative(s) (children or adults) O
k. Non-relative(s) (children or adults) O

*For the analysis in this report, last two categories were collapsed.

BB037 A--C

37. Did your mother (stepmother or female guardian) usually work during the following periods of your life? (MARK ONE OVAL FOR EACH LINE)

	Did not work	Worked part-time	Worked full-time	Don't know	Does not apply
a. When you were in high school	O	O	O	O	O
b. When you were in elementary school	O	O	O	O	O
c. Before you went to elementary school	O	O	O	O	O

BB039

39. What was the highest level of education your father (stepfather or male guardian) completed? (MARK ONE)

- O Do not live with father (stepfather or male guardian)
- O Less than high school graduation
- O High school graduation only
- Vocational, trade, or business school after high school
  - O Less than two years
  - O Two years or more
- College program
  - O Less than two years of college
  - O Two or more years of college (including two-year degree)
  - O Finished college (four- or five-year degree)
  - O Master's degree or equivalent
  - O Ph.D., M.D., or other advanced professional degree
- O Don't know

BB042

42. What was the highest level of education your mother (stepmother or female guardian) completed? (MARK ONE)

[RESPONSE CATEGORIES AS SAME AS BB039]

BB047G

47. How often do you spend time on the following activities outside of school? (MARK ONE OVAL FOR EACH LINE)

	Rarely or never	Less than once a week	Once or twice a week	Every day or almost every day
g. Talking with your mother or father about personal experiences	O	O	O	O

BB046A--C

46. Are the following statements about your parents true or false? (MARK ONE OVAL FOR each line)

	True	False	* Does not apply
a. My mother (stepmother or female guardian) keeps close track of how well I am doing in school	O	O	O
b. My father (stepfather or male guardian) keeps close track of how well I am doing in school	O	O	O
c. My parents (or guardians) almost always know where I am and what I'm doing	O	O	O

BB048

48. During week days about how many hours per day do you watch TV? (MARK ONE)

- Don't watch TV during week O
- Less than 1 hour O
- 1 hour or more, less than 2 O
- 2 hours or more, less than 3 O
- 3 hours or more, less than 4 O
- 4 hours or more, less than 5 O
- 5 or more O

BB050A--E

50. What do the following people think you ought to do after high school? (MARK ONE OVAL FOR EACH LINE)

	Go to college	Get a full-time job	Enter a trade school or an apprenticeship	Enter military service	They don't care	I don't know	Does not apply
a. Your father	O	O	O	O	O	O	O
b. Your mother	O	O	O	O	O	O	O
c. A guidance counselor	O	O	O	O	O	O	O
d. Teachers	O	O	O	O	O	O	O
e. Friends or relatives about your own age	O	O	O	O	O	O	O

BB053E--H

53. Please rate your school on each of the following aspects. (MARK ONE OVAL FOR EACH LINE)

	Poor	Fair	Good	Excellent	* Don't know
e. Teacher interest in students	O	O	O	O	O
f. Effective discipline	O	O	O	O	O
g. Fairness of discipline	O	O	O	O	O
h. School spirit	O	O	O	O	O

BB058A--L

58. How do you feel about each of the following statements? (MARK ONE OVAL FOR EACH LINE)

	Agree strongly	Agree	Disagree	Disagree strongly	No opinion
a. I take a positive attitude toward myself	O	O	O	O	O
b. Good luck is more important than hard work for success	O	O	O	O	O
c. I feel I am a person of worth, on an equal plane with others	O	O	O	O	O
d. I am able to do things as well as most other people	O	O	O	O	O
e. Every time I try to get ahead, something or somebody stops me	O	O	O	O	O
f. Planning only makes a person unhappy, since plans hardly ever work out anyway	O	O	O	O	O
g. People who accept their condition in life are happier than those who try to change things	O	O	O	O	O
h. On the whole, I am satisfied with myself	O	O	O	O	O
i. What happens to me is my own doing	O	O	O	O	O
j. At times I think I am no good at all	O	O	O	O	O
k. When I make plans, I am almost certain I can make them work	O	O	O	O	O
l. I feel I do not have much to be proud of	O	O	O	O	O

BB059A--F

59. Are the following statements about your experiences in school true or false? (MARK ONE OVAL FOR EACH LINE)

	True	False
a. I am satisfied with the way my education is going	O	O
b. I have had disciplinary problems in school during the last year	O	O
c. I am interested in school	O	O
d. I have been suspended or put on probation in school	O	O
e. Every once in a while I cut a class	O	O
f. I don't feel safe at this school	O	O

BB061E

67. Are the following statements about yourself true or false? (MARK ONE OVAL FOR EACH LINE)

	True	False
e. I like to work hard in school	O	O

BB065

69. As things stand now, how far in school do you think you will get? (MARK ONE)

- Less than high school graduation
- High school graduation only
- Vocational, trade, or business school after high school
  - Less than two years
  - Two years or more
- College program
  - Less than two years of college
  - Two or more years of college (including two-year degree)
  - Finish college (four- or five-year degree)
  - Master's degree or equivalent
  - Ph.D., M.D., or other advanced professional degree

YB072A & B, BB068A & B

72. Did you expect to go to college when you were in the following grades? (MARK ONE OVAL FOR EACH LINE)

When you were . . .	Yes	No	* Was not sure	* Hadn't thought about it
a. In the 6th grade?				
b. In the 7th grade?				
c. In the 8th grade?				
d. In the 9th grade?				

BB068A & B, EB068C & D

68. Did you expect to go to college when you were in the following grades? (MARK ONE OVAL FOR EACH LINE)

When you were . . .	Yes	No	* Was not sure	* Hadn't thought about it
a. In the 8th grade?				
b. In the 9th grade?				
c. In the 10th grade?				
d. In the 11th grade?				

EB073

73. If you plan to work full time after high school, do you have a definite job lined up for you after you leave high school? (MARK ONE)

- Yes, I'll continue in a job I now have
- Yes, I have a new job lined up
- No, but I've inquired at employment agencies or potential employers, looked in the newspapers, etc.
- No, I haven't done anything yet to get a job
- Do not plan to work full time after high school *

Background information . . .

BB083

83. Sex:
(MARK ONE)

Male .....O
Female .....O

BB087A—G

87. Do you have any of the following conditions? (MARK ALL THAT APPLY)
O

a. Specific learning disability .....O
b. Visual handicap .....O
c. Hard of hearing .....O
d. Deafness .....O
e. Speech disability .....O
f. Orthopedic handicap .....O
g. Other health impairment .....O

BB088

88. Do you feel that you have a physical condition that limits the kind or amount of work you can do on a job, or affects your chances for more education? (MARK ONE)

No .....O
Yes .....O

NOTE: The following four questions pertain to fundamental freedoms of expression. These and other questions will provide helpful information for the interpretation of survey results. If you have any reservations about answering questions 91, 92, 93 and 94, please remember that you may leave them unanswered.

BB091

91. What is your religious background? (MARK ONE)

Baptist .....O
Methodist .....O
Lutheran .....O
Presbyterian .....O
Episcopalian .....O
Other Protestant denomination .....O
Catholic .....O
Other Christian .....O
Jewish .....O
Other religion .....O
None .....O

BB089

90. What is your race? (MARK ONE)

- Black ○
- White ○
- American Indian or Alaskan Native ○
- Asian or Pacific Islander ○
- Other ○

BB090

91. What is your origin or descent? (If more than one, please mark below the one you consider the most important part of your background.) (MARK ONE)

HISPANIC OR SPANISH:

- Mexican, Mexican-American, Chicano ○
- Cuban, Cubano ○
- Puerto Rican, Puertorriqueno or Boricua ○
- Other Latin American, Latino, Hispanic, or Spanish descent ○

NON-HISPANIC:

- African:
  - Afro-American ○
  - West Indian or Carribean ○
- Alaskan Native ○
- American Indian ○
- Asian or Pacific Islander:
  - Chinese ○
  - Filipino ○
  - Indian, Pakistani or other South Asian ○
  - Japanese ○
  - Korean ○
  - Vietnamese ○
  - Other Pacific Islander ○
  - Other Asian ○
- European:
  - English or Welsh ○
  - French ○
  - German ○
  - Greek ○
  - Irish ○
  - Italian ○
  - Polish ○
  - Portuguese ○
  - Russian ○
  - Scottish ○
  - Other European ○
- Canadian (French) ○
- Canadian (Other) ○
- United States only ○

Other (WRITE IN) _____ ○

BB095

96. Did anyone at home read to you when you were young before you started school? (MARK ONE)

- Never ..... O
- Less than once a month ..... O
- One to four times a month ..... O
- Several times a week ..... O
- Every day ..... O
- Don't remember ..... O

BB096A--E

97. How many brothers and sisters do you have in each of the age groups below? Please include step-brothers and step-sisters if they live, or have lived, in your home. (MARK ONE OVAL FOR EACH LINE)

How many brothers and sisters do you have who are . . .	None	One	Two	Three	Four	Five or more
a. Three or more years older than you	O	O	O	O	O	O
b. 1-2 years older	O	O	O	O	O	O
c. Same age as you	O	O	O	O	O	O
d. 1-2 years younger	O	O	O	O	O	O
e. Three or more years younger	O	O	O	O	O	O

BB100

99. American families are divided below into three equal groups according to how much money the family makes in a year. Mark the oval for the group which comes closest to the amount of money your family makes in a year. (MARK ONE)

- 1/3 of American families make: $11,999 or less ..... O
- 1/3 of American families make: $12,000 to $19,999 ..... O
- 1/3 of American families make: $20,000 or more ..... O

BB101

100. This time families are divided into seven groups according to how much money they make in a O year. Mark the oval for the group which comes closest to the amount of money your family makes in a year. (MARK ONE)

- $6,999 or less ..... O
- $7,000 to $11,999 ..... O
- $12,000 to $15,999 ..... O
- $16,000 to $19,999 ..... O
- $20,000 to $24,999 ..... O
- $25,000 to $37,999 ..... O
- $38,000 or more ..... O

BB103

102. How many rooms are there in your home? Count only the rooms your family lives in. Count the kitchen (if separate) but not bathrooms. (MARK ONE)

1	2	3	4	5	6	7	8	9	10 or more
○	○	○	○	○	○	○	○	○	○

BB104A--I

103. Which of the following do you have in your home? (MARK ONE OVAL FOR EACH LINE)

		Have	Do not have
a.	A specific place for study	○	○
b.	A daily newspaper	○	○
c.	Encyclopedia or other reference books	○	○
d.	Typewriter	○	○
e.	Electric dishwasher	○	○
f.	Two or more cars or trucks that run	○	○
g.	More than 50 books	○	○
h.	A room of your own	○	○
i.	Pocket calculator	○	○

BB115

112. Do you plan to go to college at some time in the future? (MARK ONE)

- Yes, right after high school ○
- Yes, after staying out one year ○
- Yes, after a longer period out of school ○
- Don't know ○
- No ○

B.3 Items from the School Questionnaire

SB002

2. As of October 1, 1980 (or the nearest date for which data are available), what was the total membership of your high school, and what were the memberships in grades 10 and 12? (IF NONE, WRITE "0")

Total high school membership	Grade 10	Grade 12
(A)	(B)	(C)

SB018

18. Please indicate whether each of the following courses are taught in your school as separate courses. (CIRCLE ONE NUMBER ON EACH LINE)

	Yes	No
a. Second-year algebra	1	2
b. Art	3	4
c. Auto mechanics	1	2
d. Calculus	3	4
e. Chemistry	1	2
f. Drama	3	4
g. Driver training	1	2
h. Economics	3	4
i. Ethnic Studies or Black Studies	1	2
j. Family Life or Sex Education	3	4
k. Geometry	1	2
l. Third-year Spanish	3	4
m. Third-year German	1	2
n. Third-year French	3	4
o. Home Economics	1	2
p. Physics	3	4
q. Psychology	1	2
r. Russian	3	4
s. Trigonometry	1	2
t. Wood or machine shop	3	4

SB027

27. Which of these facilities are available at your school? (CIRCLE AS MANY NUMBERS AS APPLY)

a.	Indoor lounge for students	1
b.	Career information center	2
c.	Occupational training center	3
d.	Media production facilities	4
e.	Remedial reading and/or remedial mathematics laboratory	5
f.	Subject area resources center(s) other than central library	1
g.	Departmental offices	2
h.	Teaching resources center for teachers' use	3
i.	Child care or nursery school facility	4
j.	Student cafeteria	5

SB029

29. A. Please indicate whether or not your school currently offers each of the following programs to students. (CIRCLE ONE NUMBER ON EACH LINE)

		Offered	Not offered
a.	Credit by contract	1	2
b.	Travel for credit	3	4
c.	Off-campus work experience or occupational training for credit	1	2
d.	College Board Advanced Placement Courses	3	4
e.	Student exchange program	1	2
f.	Alternative school program	3	4
g.	Special program for pregnant girls or mothers	1	2
h.	Continuation school	3	4
i.	Program for the gifted or talented	1	2
j.	Bilingual program	3	4

32. Please indicate whether or not this high school participates or has students who participate in each of the following federally assisted or financed programs. (CIRCLE ONE NUMBER ON EACH LINE)

	School/Students participate(s)	School/Students do(es) not participate
a. Upward Bound	1	2
b. Talent Search	1	2
c. Elementary and Secondary Education Act:		
1. Title I (Education of children of economically disadvantaged)	1	2
2. Title IV-B (Library and learning resources)	1	2
3. Title IV-C (Educational innovation and support)	1	2
4. Title IV-D (Supplementary educational centers and services)	1	2
5. Title VII (Bilingual education)	1	2
6. Title IX (Ethnic heritage studies)	1	2
d. Indian Education Act	1	2
e. Emergency School Aid Act (desegregation assistance)	1	2
f. School Assistance in Federally Affected Areas	1	2
g. Comprehensive Employment and Training Act (CETA)	1	2
h. Vocational Education Act of 1963:		
1. Consumer and Homemaking Education	1	2
2. Vocational Education Basic Programs	1	2
3. Vocational Education for persons with special needs	1	2
4. Cooperative Vocational Education Program	1	2
5. High School Vocational Education Work-Study Program	1	2
i. Junior ROTC	1	2

SB033

33. Please indicate whether or not your school uses each of the following criteria to classify students as handicapped. (CIRCLE ONE NUMBER ON EACH LINE)

	Yes	No
Standard tests for evaluating specific handicaps	1	2
Federal guidelines	1	2
State guidelines	1	2
Judgments and observations of school counselors and teachers	1	2

SB034

34. How many students in your high school are classified as handicapped? (IF NONE, WRITE "0")

Number of handicapped students: _____

SB035

35. How does your high school usually accommodate the following types of handicapped students? (CIRCLE ONE NUMBER ON EACH LINE)

	Attend regular classes only	Attend some special and some regular classes	Attend special classes only	No students with this type of handicap in school
a. Multiple handicapped	1	2	3	4
b. Trainable mentally retarded	1	2	3	4
c. Educable mentally retarded	1	2	3	4
d. Hard of hearing	1	2	3	4
e. Deaf	1	2	3	4
f. Deaf-blind	1	2	3	4
g. Speech impaired	1	2	3	4
h. Visually impaired	1	2	3	4
i. Emotionally disturbed	1	2	3	4
j. Orthopedically impaired	1	2	3	4
k. Other health impaired	1	2	3	4
l. Specific learning disabilities	1	2	3	4

SB039

39. Please indicate the size of your high school's staff in each of the following categories. (ENTER NUMBER OR ZERO ON EACH LINE)

	Number of full-time (or full-time equivalent) personnel
a. Assistant principals and deans	_____
b. Counselors	_____
c. Classroom teachers	_____
d. Curriculum specialists	_____
e. Remedial specialists	_____
f. Librarians/media specialists	_____
g. Psychologists	_____
h. Teaching aides	_____
i. Student teachers	_____
j. Volunteers	_____
k. Contributed services	_____
l. Security guards	_____

SB054

54. Listed below are certain rules which some schools have. Please indicate whether or not each is enforced in your high school. (CIRCLE ONE NUMBER ON EACH LINE)

	Yes	No
a. School grounds closed to students at lunch	1	2
b. Students responsible to the school for property damage	3	4
c. Hall passes required	1	2
d. "No smoking" rules	3	4
e. Rules about student dress	1	2

SB056

56. To what degree is each of these matters a problem in your high school? (CIRCLE ONE NUMBER ON EACH LINE)

	Serious	Moderate	Minor	Not at all
a. Student absenteeism	1	2	3	4
b. Students' cutting classes	1	2	3	4
c. Parents' lack of interest in students' progress	1	2	3	4
d. Parents' lack of interest in school matters	1	2	3	4
e. Teacher absenteeism	1	2	3	4
f. Teachers' lack of commitment or motivation	1	2	3	4
g. Physical conflicts among students	1	2	3	4
h. Conflicts between students and teachers	1	2	3	4
i. Robbery or theft	1	2	3	4
j. Vandalism of school property	1	2	3	4
k. Student use of drugs or alcohol	1	2	3	-
l. Rape or attempted rape	1	2	3	4
m. Student possession of weapons	1	2	3	4
n. Verbal abuse of teachers	1	2	3	4

Appendix C

The comparisons carried out in chapter 7 are described below in more technical terms, to clarify the complexity that arises in the comparisons. Let

x_{jh} = behavior or school characteristic j for student h

z_{ih} = background characteristic i for student h

δ_{ok} = 0 if student h is not in an other private school,

1 if student is in an other private school

For each behavior or school characteristic j (j = 1, ..., 13 for seniors, j = 1, ..., 12 for sophomores), two sets of equations are calculated, for the public school sector (k = 1) and the private school sector (k = 2). This is altogether 50 equations (2 x 12 + 2 x 13 = 50).

$$x_{jk} = a_{jk} + \sum_{i=1}^{17} b_{jki}\, z_{ih} + b_{jko}\delta_{ok} + \varepsilon_h \qquad (1)$$

Because $\delta_{ok} = 0$ for all students in the public sector, this term drops out of the public sector equations.

Now let

$\bar{z}_{i\ell}$ = the mean of background characteristic i taken over a set of students denoted by the index ℓ. In this analysis, only two sets of students are used: $\ell = 1 \equiv$ Public school sophomores; $\ell = 2 \equiv$ Catholic school sophomores.

then for table 7.2.1 and 7.2.4 we use equation (1) to calculate

$$\hat{x}_{jk'\ell} = a_{jk} + \sum_{i=1}^{17} b_{jki}\, \bar{z}_{i\ell} + b_{j2o}\, \delta_{ok} \qquad (2)$$

When k = 1 (public school equation), then $\delta_{ok} = 0$, and $k' = 1$; when k = 2 (private school equation) and $\delta_{ok} = 0$, then $k' = 2$; when k = 2 and $\delta_{ok} = 1$, then $k' = 3$.

This gives, for each grade level:

$\hat{x}_{j1\ell}$ = the value of school or behavioral characteristic j in a public school (=1) for the average student from set ℓ. (When $\ell = 1$, $\hat{x}_{j11}$ for the sophomore equation is the same as $\bar{x}_{j1}$, the average value of characteristic j for public school sophomores.)

$\hat{x}_{j2\ell}$ = the value of school or behavioral characteristic j in a Catholic school (=2) for the average student from set ℓ. (When $\ell = 2$, $\hat{x}_{j22}$ for the sophomore equation is approximately the same as $\bar{x}_{j2}$, the average value of characteristic j for Catholic school sophomores.*)

$\hat{x}_{j3\ell}$ = the value of school or behavioral characteristic j in an other private school (=3) for the average student set ℓ. This can be seen to be equal to $\hat{x}_{j2\ell} + b_{j2o}$.

In table 7.2.1, the numbers in the Catholic - Public column are $\hat{x}_{j21} - \hat{x}_{j11}$. The numbers in the Other Private - Public columns are $\hat{x}_{j31} - \hat{x}_{j11}$.

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*The full equality holds only if the interaction terms between δ_{ok} and z_i are zero - that is, if there is no interaction between the background characteristics and the other private school characteristic j. In table 7.2.1 and 7.2.4, the values used for $\hat{x}_{j11}$ and $\hat{x}_{j22}$ respectively are the actual means $\bar{x}_{j2\ell}$ and $\bar{x}_{j2}$ respectively.

In table 7.2.4, the numbers in the Catholic - Public column are $\hat{x}_{j22} - \hat{x}_{j12}$. The numbers in the Other Private - Public columns are $\hat{x}_{j32} - \hat{x}_{j12}$.

To obtain table 7.2.2 and 7.2.5, a regression equation was estimated for each test score and each grade level, for the public sector.

Let

y_{1h} = test score of student h in the public sector (=1).

$$y_{1h} = a_i^* + \sum_{i=1}^{17} b_{1i}^* z_{ih} + \sum_{j=18}^{30} b_{1j}^* x_{jh} + \varepsilon_h \qquad (3)$$

Then in table 7.2.2, the numbers in the row for behavioral or school characteristic j are obtained from the numbers in table 7.2.1 and the regression coefficients from eq. (3) as follows:

$$\Delta\hat{y}_{1j12} = b_{1j}^* (\hat{x}_{j21} - \hat{x}_{j11}) \qquad (4)$$

≡ achievement increment in public schools (=1) which have a value for characteristic j equal to that found for the average public school sophomore (=1) in Catholic schools (=2) relative to the value found for students of the same background in public schools.

$$\Delta\hat{y}_{1j13} = b_{1j}^* (\hat{x}_{j31} - x_{j11}) \qquad (5)$$

≡ achievement increment in public schools (=1) which have a value for characteristic j equal to that found for the average public school sophomore (=1) in other private schools (=3) relative to the value found for students of the same background in public schools.

In table 7.2.5, the numbers in the row for each behavioral or school characteristic j are obtained from the number in table 7.2.4 and the regression coefficients from equation (3) as follows:

$$\hat{\Delta y}_{1j22} = b^*_{1j} \ (x_{j22} - x_{j12}) \qquad (6)$$

$\equiv$ achievement in public schools (=1) which have a value for for characteristic j equal to that found for the average Catholic school sophomore (=2) in Catholic schools (=2) relative to the values found for students of the same background in public schools.

$$\hat{\Delta y}_{1j23} = b^*_{1j} \ (\hat{x}_{j32} - \hat{x}_{j12}) \qquad (7)$$

As is evident, various other comparisons could be made. The most prominent would be that obtained from an equation analogous to equation (3), but for the private sector, to give regression coefficients b^*_{2j} and values for achievement increments of $\hat{\Delta y}_{2j12}$, $\hat{\Delta y}_{2j13}$, $\hat{\Delta y}_{2j22}$, $\hat{\Delta y}_{2j23}$. This would show the effects of these school characteristics in the private sector, while tables 7.2.2 and 7.2.5 show these effects only for the public sector. These comparisons are given in a footnote in chapter 7.

It is useful to sketch in addition what an analysis with a fully nested model would look like allowing for differing effects of background characteristics in each school and differing effects of behavioral and school characteristics.*

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*We would like to thank Ronald Thisted for his helpful comments and suggestions in this section.

Let

$x_{k\ell(i(h))}$ = behavioral characteristic k of student h in school i in sector ℓ, or school characteristic k in sector ℓ as reported by student h (in school i).

Then the full equation for each of these characteristics k is

$$x_{k\ell(i(h))} = \alpha_k + \alpha_{k\ell} + \alpha_{k\ell(i)} + \sum_{j=1}^{17} \beta_{k\ell j}\, \bar{z}_{\ell(i)j} + \sum_{j=1}^{17} \beta_{k\ell(i)j}\, [z_{\ell(i(h))j} - \bar{z}_{\ell(i)j}] + \varepsilon_{\ell(i(h))} \qquad (8)$$

Where

α_k ≡ overall mean for school or behavioral characteristic

$\alpha_{k\ell}$ ≡ sector effect on k with a mean of 0

$\alpha_{k\ell(i)}$ ≡ school effect on k with a mean of 0 within sector ℓ

$\beta_{k\ell j}$ ≡ average effect of background characteristic j on k in sector ℓ

$\beta_{k\ell(i)j}$ ≡ effect of background characteristics j on k in school i in sector ℓ (mean of $\beta_{k\ell(i)j}$ over i in sector ℓ = 0)

$\varepsilon_{\ell(i(h))}$ ≡ individual deviation, identically and independently distributed with a mean 0 and variance $\sigma^2_{\ell(i)}$

Then the sector effect on achievement through the behavioral and school characteristics k is found by:

$$y_{\ell(i(h))} = \psi + \psi_\ell + \psi_{\ell(i)} + \sum_{k=1}^{13} \gamma_{\ell k}\, \alpha_k + [\alpha_{k\ell} + \alpha_{k\ell(i)}] + \sum_{j=1}^{17} \lambda_{\ell j}\, \bar{z}_{\ell(i)} + \sum_{j=1}^{17} \lambda_{\ell(i)j}\, [z_{\ell(i(h))j} - \bar{z}_{\ell(i)j}] + \zeta_{\ell(i(h))} \qquad (9)$$

where

$y_{\ell(i(h))}$ ≡ test score of student h in school i in sector ℓ

ψ ≡ overall test mean

ψ_{ℓ} ≡ effect of sector ℓ independent of behavioral and school characteristics k (mean = 0)

$\psi_{\ell(i)}$ ≡ school effect independent of behavioral and school characteristics k (mean = 0 within sector ℓ)

$\gamma_{\ell k}$ ≡ effect of behavior or school characteristics k on achievement in sector ℓ

$\lambda_{\ell j}$ ≡ effect of background characteristic j on achievement in sector ℓ

$\lambda_{\ell(i)j}$ ≡ effect of background characteristics j on achievement in school i in sector ℓ (mean of $\lambda_{\ell(i)j}$ over i in sector ℓ = 0)

$\zeta_{\ell(i(h))}$ ≡ individual deviation, identically and independently distributed with mean 0 and variance $T^2_{\ell(i)}$.

With this model (which does not allow for any individual-level effects of behavioral characteristics on homework, and does not allow for the effects on achievement of interaction effects between background characteristics and school characteristics), the effect of school sector ℓ relative to school sector ℓ' on achievement through background characteristic k is given by either of two quantities

$$\Delta_1 y_{\ell\ell'k} = \gamma_{\ell k} (\alpha_{k\ell} - \alpha_{k\ell'})$$

or

$$\Delta_2 y_{\ell\ell'k} = \gamma_{\ell' k} (\alpha_{k\ell} - \alpha_{k\ell'})$$

The first of these quantities gives the effect on achievement in sector ℓ and the second gives the effect on achievement in sector ℓ'.

The number of schools makes this fully nested model not feasible to estimate. It is probably true that the greatest difference between the fully nested model and the model actually estimated lies in our use in equation (3) of individual-level values of x_{jh} in estimation of sector effects b_{ij} of school or behavioral characteristic j on achievement in sector ℓ, rather than school means $\alpha_k + \alpha_{k\ell} + \alpha_{k\ell(i)}$ as given in equation (9) for estimation of sector effects $\gamma_{\ell k}$ of school or behavioral characteristic k on achievement in sector ℓ. The within-school variance in x_{jh} will in general make b_{ij} greater than the comparable $\gamma_{\ell j}$.

REFERENCES

Abramowitz, S., and Stackhouse, E. A. 1980. Private High School Today. Washington, D.C.: National Institute of Education.

Alexander, K. L., and McDill, E. C. 1976. "Selection and Allocation Within Schools: Some Causes and Consequences of Curriculum Placement." American Sociological Review 41:963-980.

Becker, H. J., McPartland, J. M., and Thomas, G. E. 1978. "The Measurement of Segregation: The Dissimilarity Index and Coleman's Segregation Index Compared." Social Statistics Section, Annual Meeting of the American Statistical Association.

Campbell, D. 1981. "Comment on the Draft Report of Public and Private Schools." School Research Forum April:35.

Coleman, J. 1981. Longitudinal Data Analysis New York: Basic Books.

Coleman, J. 1975. "Methods and Results in the IEA Studies of Effects of School on Learning." Review of Educational Research 45 (Summer):335-386.

Coleman, J., Bartot, V., Lewin-Epstein, N., and Olson, L. 1979. "Pluralistic Policy Research Design." Report submitted to the National Center for Education Statistics.

Coleman, J., Campbell, E., et al. 1966. Equality of Educational Opportunity. U.S. Department of Health, Education, and Welfare, Office of Education. Washington, D.C.: U.S. Government Printing Office.

Coleman, J., and Kelley, S. 1976. in The Urban Predicament, William Gorham and Nathan Glazer, eds., Washington, D.C., pp. 231-280.

Coleman, J., Kelley, S., and Moore, J. 1975. Trends in School Segregation: 1968-1973. Washington: The Urban Institute.

Coleman, J., Hoffer, T., and Kilgore, S. 1981. "Questions and Answers: Our Response." Harvard Educational Review (Fall).

Conant, J. B. 1959. The American High School Today. New York: McGraw-Hill.

Cortese, C. F., Falk, R. F., and Cohen, F. 1976. "Further Considerations on the Methodological Analysis of Segregation Indices." American Sociological Review 41:630-637.

Cronbach, L. J. 1981. Rejoinder to Coleman, Annual Meeting of the American Education Research Association, Los Angeles, April.

DiPrete, T. 1981. "Discipline and Order in American High Schools." Report submitted to the National Center for Education Statistics.

Draper, N., and Smith, H. 1966. Applied Regression Analysis. New York: John Wiley and Sons, Inc.

Erickson, D. A., Nault, R. L., and Cooper, B. 1978. "Recent Enrollment Trends in U.S. Nonpublic Schools." In Declining Enrollments: The Challenge of the Coming Decade, Susan Abramowitz and Stuart Rosenfelds, eds. Washington, D.C..: National Institute of Education.

Farley, R., Richards, T., and Wurdock, C. 1980. "School Desegregation and White Flight: An Investigation of Competing Models and Their Discrepant Findings" Sociology of Education 53 (July):123-139.

Galladay, M. A., and Wulfsburg, R. M. 1980. Condition of Vocational Education. Washington, D. C.: National Center for Education Statistics.

Goldberger, A. 1981. "Coleman Goes Private (in Public)." (Unpublished Manuscript)

Hanushek, E. A. 1971. "Teacher Characteristics and Gains in Student Achievement: Estimation Using Micro-Data." American Economic Review (May).

Hanushek, E. A. 1981. "Throwing Money at Schools." Journal of Policy Analysis and Management (Fall).

Hanushek, Eric A., and Jackson, John E. 1977. Statistical Methods for Social Scientists. New York: Academic Press Inc.

Heckman, J. J. 1979. "Sample Bias as Specification Error." Econometrica 47 (January):153-162.

Heyns, B. 1978. Summer Learning and the Effects of Schooling. Forward by Christopher Jencks. New York: Academic Press.

Jencks, C. 1978. "What's Behind the Drop in Test Scores?" Working Papers for a New Society. Cambridge, Massachusetts: Cambridge Policy Studies Institute.

Kish, L., and Frankel, M. R. 1974. "Inferences From Complex Samples." Journal of the Royal Statistics Society 36:1-37.

Kish, L., and Frankel, M. R. 1974. "Inference From Complex Samples." Journal of the Royal Statistical Society Series B (Methodological) 36(1):1-37.

Kraushaar, O. F. 1972. American Nonpublic Schools. Baltimore: The Johns Hopkins University Press.

Levine, E. M. 1980. "The Declining Educational Achievement of Middle Class Students, the Deterioration of Educational and Social Standards, and Parents' Negligence." Sociological Spectrum 17-33.

Lewin-Epstein, N. 1981. "Youth Employment During High School." Report submitted to the National Center for Education Statistics.

Lott, J. R., and Fremling, G. M. 1980. "Juvenile Delinquency and Education: An Economic Study." Los Angeles: International Institute for Economic Research, Westwood Center.

McLaughlin, D. H., and Wise, L. L. 1980. Nonpublic Education of the Nation's Children. "Palo Alto: American Institute for Research" (April). (mimeograph)

Mort, P. 1946. Principles of School Administration. New York: McGraw-Hill.

Murnane, R. J. 1975 The Impact of School Resources on the Learning of Inner-City School Children. Cambridge, Mass.: Ballinger.

Murnane, R. J. 1981. "Evidence, Analysis and Unanswered Questions." Harvard Educational Review 53:4.

National Assessment of Educational Progress. 1981. "Reading and Mathematics Achievement in Public and Private Schools: Is There a Difference?" (mimeograph)

National Catholic Education Association. 1980. How to Service Students with Federal Educational Program Benefits.

National Catholic Education Association. 1980. Summary and Evaluation Report.

National Longitudinal Survey of High School Seniors. 1972. Washington, D.C.: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics.

Nielsen, F., and Fernandez, R. 1981. "Hispanic Students in United States High Schools." Report submitted to the National Center for Education Statistics.

Page, E., and Keith, T. 1981. "Effects of U.S. Private Schools: A Technical Analysis of Two Recent Claims." Educational Researcher 10 (August):7-17.

Plackett, R. L. and Burman, J. P. 1946. "The Design of Optimum Multifactorial Experiments." Biometrika 33:305-325.

Project Talent. 1960. Washington, D.C.: U.S. Department of Health, Education and Welfare, Office of Education.

Rivlin, A. M., and Timpane, P. M. 1975. Planned Variation in Education: Should We Give Up or Try Harder? Washington, D.C.: Brookings.

Rutter, M., Maugham, B., Mortimore, P., Ouston, J., and Smith, A. 1979. Fifteen Thousand Hours. Harvard University Press.

Schwartz, J., and Winship, C. 1979. "The Welfare Approach to Measuring Inequality." In Sociological Methodology 1980, Karl F. Schuessler, ed. San Francisco: Jossey-Bass.

Taubman, P. (ed.) 1977. Kinometrics: Determinants of Sociometric Success Within and Between Families. Amsterdam, New Holland.

Thomas, G. E., Alexander, K., and Eckland, B. K. 1979. "Access to Higher Education: The Importance of Race, Sex, Social Class and Academic Credentials." School Review 57:133-157.

Toby, J. 1980. "Crime in American Public Schools." The Public Interest Winter:18-42.

West, E. G. 1980. "Education and Crime: A Political Economy of Interdependents." Character 1:5-7.

Zoloth, S. S. 1976. "Alternative Measures of School Segregation." Land Economics 52:278-298.

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